ZOOPLANKTON VOLUMES OFF THE PACIFIC COAST, 1953

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Prepared by

Staff of the South Pacific Fishery Investigations
U. S. Fish and Wildlife Service

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Zooplankton Volumes off the Pacific Coast, 1953

This report, the fourth in a series, contains a record of the volumes of zooplankton collected on the survey cruises of the California Cooperative Oceanic Fisheries Investigations off the Pacific coast of California and Baja California. Regular survey cruises were made at monthly intervals, except in September and November. An area off southern California (station lines 83-87) was occupied more frequently, including cruises in September and November. The vessels participating in cruises during 1953 included the CREST, E. W. SCRIPPS, HORIZON, PAOLINA T. and S. F. BAIRD, of the Scripps Institution of Oceanography, and the YELLOWFIN of the California Department of Fish and Game.

The plankton samples are used in studying the early life histories (particularly the distribution and abundance of spawning and the rate of larval survival) of the sardine and other commercially important or potentially important fishes, and also in studying the productivity of sardine spawning areas. The former problem is being investigated by the South Pacific Fishery Investigations of the United States Fish and Wildlife Service, the latter by the Scripps Institution of Oceanography of the University of California.

The nets used on these cruises were the same as those used on all cruises since 1949. They were made of No. 30xxx grit gauze (an extra-strong silk bolting cloth), conical in shape, with a 1-meter mouth opening, and about 5 meters long. The last 40 cms. of the cone, and the cod-end bags were made of No. 56xxx silk grit gauze.

The procedure for taking net tows was standard for all cruises. Each haul was made with 200 meters of wire out (approximately 140 meters deep) wherever depth of water permitted. The estimated depth of each haul is given in column 8 of the following tables.

The volume of plankton measured for each station is the "wet" volume. Each sample was filtered from its preserving fluid and its volume determined by displacement. The volumes listed in the following tables are (1) the total wet volumes standardized to the amount in 1000 cubic meters of water strained (column 9), and (2) the volume of smaller organisms after the removal of larger ones such as jellies, fish, larger mollusca, crustaceans and squid (column 10).

A different system of numbering cruises than that used in preceding reports, is now in effect. The cruise number is composed of four digits, the first two of which refer to the year, the other two to the month. Thus, Cruise 5301 is the January cruise of 1953, Cruise 5310 the October cruise of 1953. Formerly, consecutive numbers were given to cruises of the California Cooperative Fisheries Investigations. If the earlier system were followed, the 1953 cruises would be numbered 44 (January) through 55 (December).

Each plankton net is provided with an Atlas-type current meter, suspended in the center of the mouth. Each current meter was calibrated before and after the cruise on which it was used. The volume of water strained during a net tow was determined from the formulation:

$$V = R.a.p$$

in which

a = the cross-sectional area of the mouth of the net, in square meters.
p = length of the column of water in meters needed to effect one revolution of the current meter (determined from the appropriate current meter calibration graph).
R = total number of revolutions registered by the current meter during a haul.
V = total volume of water strained, in cubic meters.

Values for the volumes of water strained (C.M.), given in the following tables (column 7), were determined from current meter readings, except for the few enclosed in parentheses, for which reliable current meter data were lacking. For such hauls, an approximate value of "R" was obtained, which represented the average performance of the current meter at the speed and for the length of time of the tow.

The following tables are designed to serve a twofold purpose: (1) to record the volumes of plankton collected during the 1953 survey cruises, and (2) to put on record the data for all plankton tows made during 1953, including station number (column 1), location (columns 2 and 3), date and time of collection (columns 4-6), volume of water strained (column 7), and the estimated depth of the haul (column 8).

These investigations are part of the California Cooperative Oceanic Fisheries Investigations, a program sponsored by the Marine Research Committee, and carried out by the Scripps Institution of Oceanography of the University of California, the Bureau of Marine Fisheries of the California Department of Fish and Game, the California Academy of Sciences, the Hopkins Marine Station of Stanford University, and the South Pacific Fishery Investigations of the Fish and Wildlife Service.

Three earlier publications deal with plankton volumes collected on survey cruises of the California Cooperative Oceanic Fisheries Investigations. These are:

STAFF, SOUTH PACIFIC FISHERY INVESTIGATIONS

1952. Zooplankton volumes off the Pacific coast, 1951. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept.: Fisheries, No. 73, 37 pp.

1953. Zooplankton volumes off the Pacific coast, 1952. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept.: Fisheries, No. 100, 41 pp.

1954. Zooplankton volumes off the Pacific coast, 1949-50. U. S. Dept. Interior, Fish and Wildlife Service, Spec. Sci. Rept.: Fisheries, No. 125, 54 pp.

Plankton Volumes, Cruise 5301, January 1953

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
80.51	34°26.5'	120°32.5'	I-10	0907	0915	311	0-61	299	258
80.55			Occupied. Sample not quantitative						
80.60	34°09'	121°09'	I-10	0321	0334	462	0-141	199	199
80.70	33°47'	121°54.4'	I-9	2049	2104	488	0-138	172	127
80.80	33°29'	122°32'	I-9	1350	1406	550	0-134	134	47
80.90	33°09'	123°14'	I-9	0746	0800	552	0-125	72	31
80.100	32°49'	123°55.4'	I-9	0216	0231	549	0-123	89	67
83.40			Occupied. No biological data taken						
83.43	34°08'	119°34'	I-11	2336	2351	594	0-129	268	200
83.48	33°58.3'	119°55'	I-12	0358	0408	314	0-44	159	140
83.51	33°52'	120°08.3'	I-12	0625	0640	488	0-134	78	78
83.55	33°44'	120°24.5'	I-12	0931	0943	399	0-112	168	168
83.60	33°34'	120°45'	I-12	1256	1311	464	0-142	175	155
85.39	34°00'	119°04'	I-13	1248	1256	274	0-67	128	128
85.40	33°57'	119°10.5'	I-13	1041	1055	484	0-140	89	89
85.40E	33°57'	119°10.5'	I-17	0816	0831	506	0-146	328	316
85.45	33°47'	119°31.3'	I-13	0626	0641	475	0-127	223	223
85.45E	33°47'	119°31.2'	I-17	1251	1306	494	0-147	168	109
85.50	33°37'	119°52'	I-13	0135	0151	459	0-143	275	275
85.55	33°25.2'	120°11.7'	I-12	2056	2110	426	0-144	266	266
85.60	33°17'	120°33.5'	I-12	1616	1631	450	0-143	6675	720
87.35	33°50'	118°37.5'	I-13	1601	1616	483	0-132	91	91
87.40	33°40'	118°58.5'	I-13	1915	2011	505	0-138	166	166
87.45			Occupied. No biological data taken						
87.50			Occupied. No biological data taken						
87.55	33°10'	120°00.5'	I-14	0831	0845	508	0-125	191	102
87.60	33°00'	120°21.5'	I-14	1226	1241	455	0-140	728	728
90.28	33°28.5'	117°46.7'	I-17	0308	0316	288	0-59	97	97
90.30	33°24.5'	117°55'	I-17	0125	0141	548	0-137	62	62
90.37	33°11'	118°23.5'	I-16	2116	2131	527	0-130	222	211
90.45	32°54.5'	118°56'	I-16	1609	1626	514	0-146	146	66
90.53	32°38.5'	119°29'	I-16	1055	1110	470	0-149	219	159
90.60	32°23'	119°59'	I-16	0721	0736	506	0-142	611	346
90.70	32°04.5'	120°39'	I-16	0011	0026	467	0-148	64	64
90.80	31°45'	121°19'	I-15	1541	1556	429	0-158	536	30
90.90	31°25'	121°59'	I-15	0714	0730	534	0-136	1131	64
93.27	32°56'	117°19.2'	I-17	0756	0811	524	0-118	69	38
93.30	32°50'	117°31.5'	I-17	1016	1031	526	0-146	38	38
93.40	32°30'	118°12.5'	I-17	1535	1550	508	0-139	232	87
93.50	32°10'	118°53.5'	I-17	2136	2151	434	0-151	69	69
93.60			Occupied. Sample not quantitative						
97.30	32°15.4'	117°08.8'	I-19	0203	0211	268	0-43	45	45
97.32	32°11.5'	117°17'	I-19	0026	0041	449	0-152	120	82
97.40	31°55.5'	117°50'	I-18	1946	2000	472	0-143	91	57

Plankton Volumes, Cruise 5301, January 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
97.50	31°35.5'	118°30.5'	I-18	1416	1431	451	0-143	102	102
97.60	31°15.5'	119°10.5'	I-18	0906	0921	435	0-156	182	150
100.29	31°42.2'	116°43.4'	I-19	0628	0636	257	0-68	78	78
100.30	31°40.5'	116°46.5'	I-19	0735	0751	477	0-142	46	46
100.40	31°21'	117°27'	I-19	1320	1336	532	0-145	133	122
100.50	31°01'	118°07'	I-19	1926	1941	462	0-146	87	58
100.60	30°41'	118°47.5'	I-20	0126	0141	478	0-139	34	34
100.70	30°20.5'	119°27'	I-20	0736	0751	431	0-152	81	46
100.80	30°01'	120°07'	I-20	1326	1341	473	0-141	25	25
100.90	29°40.5'	120°47'	I-20	1756	1811	475	0-145	38	38
105.32	30°45'	116°21'	I-22	0832	0842	302	0-64	136	80
105.35	30°39'	116°33'	I-22	0655	0711	555	0-118	74	31
105.40	30°28.5'	116°54'	I-22	0336	0351	445	0-154	85	85
105.50	30°08.5'	117°34.5'	I-21	2205	2221	434	0-146	101	69
105.60	29°48.5'	118°14.5'	I-21	1536	1552	403	0-175	30	30
105.70	29°29'	118°54'	I-21	0856	0911	398	0-150	111	60
105.80	29°09'	119°34'	I-21	0206	0221	374	0-173	198	171
110.33			Not occupied						
110.35			Not occupied						
110.40			Not occupied						
110.50	29°17'	116°59'	I-20	0436	0451	511	0-144	43	43
110.60	28°56'	117°39'	I-19	2236	2250	470	0-144	142	72
110.70	28°37'	118°18'	I-19	1706	1721	573	0-119	87	45
110.80	28°17'	118°55'	I-19	1136	1151	543	0-127	26	26
113.30			Not occupied						
113.35			Occupied. Sample not quantitative						
113.40			Not occupied						
113.50	28°42'	116°37'	I-20	0911	0926	499	0-139	64	64
117.26			Not occupied						
117.30			Not occupied						
117.35			Not occupied						
117.40	28°28'	115°35'	I-20	2001	2015	449	0-141	80	80
117.50	28°08'	116°15'	I-20	1406	1421	496	0-137	157	157
120.25	28°23'	114°15'	I-17	1428	1434	247	0-48	16	16
120.30	28°13'	114°34'	I-17	1708	1716	266	0-75	154	154
120.35	28°03'	114°54'	I-17	1943	1951	295	0-67	203	203
120.45	27°43'	115°33'	I-18	0126	0140	536	0-137	145	145
120.50	27°33'	115°53'	I-18	0501	0516	521	0-138	73	73
120.60	27°13'	116°32'	I-18	1041	1056	544	0-132	33	33
120.70	26°52'	117°11'	I-18	1621	1636	548	0-132	18	18
120.80	26°32'	117°48'	I-18	2126	2141	513	0-136	92	92
123.37	27°24'	114°36'	I-15	1058	1103	150	0-34	153	153
123.40			Not occupied						
123.50			Not occupied						

Plankton Volumes, Cruise 5301, January 1953 (cont'd)

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
123.60			Not occupied						
127.34	26°55'	114°06'	I-15	0013	0021	249	0-38	88	88
127.40			Not occupied						
127.50			Not occupied						
127.60			Not occupied						
130.30			Not occupied						
130.35	26°24.5'	113°46'	I-14	0452	0503	450	0-100	58	40
130.40	26°13.5'	114°05.5'	I-14	0220	0235	534	0-137	36	36
130.50			Occupied. No biological data taken						
130.60	25°33'	115°16'	I-13	1506	1520	508	0-155	49	49
133.25	26°03'	112°51'	I-12	2018	2026	315	0-66	60	60
133.30	25°54'	113°07'	I-12	2226	2240	554	0-127	61	61
133.40	25°34'	113°46'	I-13	0306	0321	597	0-132	102	102
133.50	25°19'	114°21'	I-13	0806	0820	554	0-132	58	47
137.23	25°35'	112°23'	I-12	1553	1600	267	0-56	30	30
137.30	25°23'	112°47'	I-12	1251	1306	585	0-129	58	58
137.40	25°00'	113°24'	I-12	0756	0811	516	0-131	23	23
137.50	24°40'	114°02'	I-12	0311	0326	586	0-134	143	143
140.30	24°45'	112°24'	I-11	1048	1055	288	0-57	128	128
140.35	24°35'	112°43'	I-11	1356	1410	499	0-134	44	44
140.40	24°26'	113°02'	I-11	1701	1716	493	0-131	61	28
140.50			Occupied. No biological data taken						
143.26	24°20'	111°50'	I-11	0633	0641	281	0-69	114	114
143.30	24°11'	112°03'	I-11	0416	0431	500	0-133	164	164
143.35	24°01'	112°22'	I-11	0126	0140	526	0-121	127	127
147.20	23°56'	111°03'	I-10	1303	1310	306	0-61	62	62
147.25	23°45'	111°22'	I-10	1606	1621	534	0-140	69	69
147.30	23°39'	111°45'	I-10	2006	2021	503	0-119	165	125
150.19	23°26'	110°37'	I-10	0914	0918	185	0-30	59	59
150.25	23°12'	111°02'	I-10	0556	0611	523	0-139	76	76
150.30	23°02'	111°20'	I-10	0221	0236	521	0-142	104	104
150.40	22°43'	111°57'	I-9	2021	2036	537	0-130	214	74

Plankton Volumes, Cruise 5302, February 1953

80.51	34°26.2'	120°32.3'	II-4	1328	1339	330	0-56	164	133
80.55	34°18.5'	120°48.6'	II-4	1715	1731	532	0-134	338	188
80.60	34°08.4'	121°12.2'	II-4	2150	2204	442	0-128	430	430
80.70	33°44'	121°43'	II-5	0406	0421	528	0-114	341	341
80.80	33°27'	122°22.5'	II-5	1136	1151	407	0-161	123	123
83.40	34°14'	119°22'	II-7	1940	1950	368	0-6	114	114
83.43	34°09.5'	119°31.8'	II-7	1756	1810	499	0-129	128	88
83.48	33°58.2'	119°55'	II-7	1258	1311	391	0-70	128	128

Plankton Volumes, Cruise 5302, February 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
83.51	33°51.7'	120°08'	II-7	1057	1111	370	0-75	108	108
83.55	33°43.5'	120°21.5'	II-7	0820	0836	420	0-143	143	143
83.60	33°34'	120°43.5'	II-7	0341	0356	413	0-136	296	150
85.39	34°00'	119°04'	II-7	2306	2321	430	0-137	144	144
85.40	33°57'	119°09.4'	II-8	0125	0141	404	0-153	114	114
85.45	33°47'	119°31.3'	II-9	1656	1711	517	0-141	120	120
85.50	33°36.4'	119°52'	II-9	2040	2056	589	0-116	382	339
85.55	33°26'	120°12.5'	II-10	0056	0111	386	0-150	176	176
85.60	33°14.8'	120°34.6'	II-10	0436	0451	585	0-117	273	171
87.35	33°47'	118°35.8'	II-11	0531	0546	537	0-126	130	130
87.40	33°38'	118°55.5'	II-11	0156	0211	459	0-136	161	161
87.45	33°28.8'	119°18'	II-10	2226	2241	476	0-136	164	164
87.50	33°20.7'	119°40.3'	II-10	1858	1909	415	0-42	217	217
87.55	33°12.3'	120°00'	II-10	1226	1241	447	0-135	174	174
87.60	33°00'	120°26'	II-10	0756	0810	433	0-140	1004	58
90.28	33°28.5'	117°46.5'	II-11	1151	1206	509	0-125	27	27
90.30	33°24.5'	117°55'	II-11	1336	1351	479	0-134	104	104
90.37	33°11'	118°23.5'	II-11	1756	1811	486	0-133	494	165
90.45	32°55.5'	118°54'	II-11	2301	2316	491	0-138	82	82
90.53	32°39.7'	119°26'	II-12	0422	0441	562	0-122	125	125
90.60	32°27.3'	119°52.8'	II-12	0836	0851	530	0-118	453	283
90.70	32°05'	120°32.5'	II-12	1556	1611	488	0-121	184	184
90.80	31°45.7'	121°10.5'	II-12	2226	2241	430	0-142	158	158
93.27	32°55.3'	117°20'	II-14	0726	0741	(428)	0-143	70	70
93.30	32°50.6'	117°35.5'	II-14	0456	0511	463	0-142	246	246
93.40	32°23.6'	118°06.5'	II-13	2236	2251	452	0-136	190	190
93.50	32°08'	118°54'	II-13	1716	1731	484	0-133	194	194
93.60	31°39.5'	119°40'	II-13	0951	1006	503	0-133	195	195
97.30	32°15'	117°09'	II-24	1704	1709	185	0-38	65	65
97.32	32°12'	117°17'	II-24	1841	1856	484	0-138	85	85
97.40	31°55'	117°50'	II-24	2256	2311	452	0-134	259	201
97.50	31°35'	118°31'	II-25	0356	0411	530	0-128	567	270
97.60	31°15'	119°10'	II-25	0815	0831	425	0-136	296	268
100.29	31°41'	116°45'	II-17	2301	2316	487	0-137	148	148
100.30	31°38'	116°51'	II-18	0008	0016	280	0-62	129	72
100.40	31°20'	117°36'	II-18	0511	0526	482	0-155	147	147
100.50	31°03'	118°08'	II-18	1020	1036	557	0-135	113	102
100.60	30°41'	118°48'	II-25	1316	1331	434	0-142	74	74
100.70	30°20'	119°27'	II-25	1746	1801	444	0-137	1088	106
100.80	30°01'	120°07'	II-25	2221	2235	431	0-139	67	67
105.32	30°47'	116°22'	II-17	0933	0940	228	0-55	61	61
105.35	30°41'	116°34'	II-17	0751	0806	466	0-135	58	58
105,40	30°32'	116°52'	II-17	0516	0531	461	0-145	152	122
105.50	30°13'	117°31'	II-17	0041	0056	482	0-138	71	71

Plankton Volumes, Cruise 5302, February 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
105.60	29°51'	118°52'	II-16	1621	1636	460	0-141	144	87
110.33	29°50.2'	115°53'	II-15	1013	1020	233	0-69	56	56
110.35	29°46.6'	116°00'	II-15	1156	1210	514	0-133	31	31
110.40	29°36.5'	116°19.5'	II-15	1456	1510	507	0-141	30	30
110.50	29°16'	116°59'	II-15	1951	2006	464	0-145	47	47
110.60	28°56.5'	117°39'	II-16	0041	0056	478	0-145	44	44
113.30	29°22'	115°18'	II-15	0534	0539	171	0-38	545	545
113.35	29°12'	115°39'	II-15	0211	0226	513	0-137	150	150
113.40	29°02'	115°58.5'	II-14	2246	2300	482	0-141	187	187
113.50	28°42'	116°37.5'	II-14	1731	1746	537	0-133	24	24
113.60	28°22'	117°17'	II-14	1236	1251	526	0-135	44	44
117.26	29°03.7'	114°46.7'	II-13	0438	0445	231	0-55	182	151
117.30	28°56.5'	114°58.7'	II-13	0618	0625	213	0-56	216	216
117.35	28°45.2'	115°20.8'	II-13	0811	0826	464	0-139	149	136
117.40	28°28'	115°35.5'	II-13	1201	1216	490	0-144	24	24
117.50	28°08'	116°15'	II-14	0256	0310	529	0-140	159	142
117.60	27°48'	116°55'	II-14	0741	0756	458	0-149	44	44
120.25	28°23'	114°14'	II-12	0734	0739	208	0-42	115	115
120.30	28°11'	114°32'	II-12	0458	0505	234	0-56	158	158
120.35	28°03'	114°54'	II-12	0142	0150	228	0-61	184	184
120.45	27°42'	115°34'	II-11	2046	2100	498	0-139	86	86
120.50	27°34'	115°52'	II-11	1756	1811	501	0-145	136	136
120.60	27°14'	116°31'	II-11	1241	1256	513	0-139	25	25
120.70	26°48'	117°23'	II-11	0526	0541	483	0-142	54	54
120.80	26°31'	117°59'	II-11	0016	0030	483	0-151	37	37
123.37	27°24'	114°40'	II-10	0403	0409	194	0-42	155	155
123.40	27°18'	114°51.5'	II-10	0611	0626	509	0-140	104	104
123.45	27°08'	115°11'	II-10	0831	0845	473	0-143	89	89
123.50	26°58'	115°32'	II-10	1126	1141	475	0-144	59	59
127.34	26°56'	114°07'	II-9	0548	0555	243	0-53	131	131
127.40	26°43'	114°29'	II-9	0246	0300	504	0-142	200	184
127.45	26°33'	114°49.2'	II-8	2321	2336	489	0-134	155	155
127.50	26°23.5'	115°08'	II-8	2101	2115	411	0-165	71	71
130.30	26°29'	113°29'	II-7	1928	1934	211	0-58	95	95
130.35	26°19'	113°48.5'	II-7	2321	2335	497	0-132	72	72
130.40	26°09'	114°07.5'	II-8	0311	0326	538	0-136	104	104
130.45	25°58'	114°28'	II-8	0546	0601	500	0-138	38	38
130.50	25°49'	114°46'	II-8	0846	0900	484	0-136	33	33
130.60	25°29'	115°24'	II-8	1351	1406	487	0-143	70	70
133.25	26°09.5'	112°56'	II-7	1543	1550	257	0-55	4	4
133.30	26°00'	113°15'	II-7	1311	1326	516	0-135	666	56
133.40	25°37.5'	113°57'	II-7	0811	0825	487	0-138	39	39
137.23	25°41'	112°25.5'	II-6	2043	2050	243	0-54	255	255
137.30	25°26'	112°54'	II-7	0051	0106	520	0-135	89	89

Plankton Volumes, Cruise 5303, March 1953

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
80.51	34°26.5'	120°32.5'	III-10	1243	1251	303	0-76	845	845
80.55	34°19'	120°48'	III-10	1511	1526	466	0-128	382	352
80.60	34°09'	121°09'	III-10	1906	1921	362	0-168	337	337
80.70	33°49'	121°51'	III-11	0111	0126	408	0-148	422	245
80.80	33°31.5'	122°31'	III-11	0801	0815	442	0-154	115	50
80.90	33°10'	123°14'	III-11	1436	1451	500	0-137	320	98
80.100	32°49'	123°54'	III-11	2036	2050	537	0-132	112	112
83.40			Occupied. Sample lost						
83.43	34°08'	119°34'	III-9	0913	0920	247	0-73	689	689
83.48	33°57.8'	119°54.5'	III-8	1306	1320	492	0-142	258	167
83.51	33°52'	120°08.3'	III-8	1101	1116	450	0-149	111	111
83.55	33°44'	120°24.5'	III-8	0826	0841	456	0-148	334	316
83.60	33°34'	120°45'	III-8	0456	0510	422	0-155	550	550
85.39	34°00'	119°04'	III-7	0656	0710	565	0-123	147	131
85.40	33°57'	119°10.5'	III-7	0942	0956	451	0-148	222	222
85.45	33°47'	119°31.2'	III-7	1351	1406	440	0-145	770	372
85.50	33°37'	119°52'	III-7	1756	1810	506	0-146	233	188
85.55	33°27'	120°12.5'	III-7	2201	2216	480	0-146	284	284
85.60	33°17'	120°33.5'	III-8	0126	0141	456	0-139	578	565
87.35	33°50'	118°37.5'	III-7	0301	0316	490	0-144	216	178
87.40	33°40'	118°58.5'	III-6	2336	2351	437	0-151	211	165
87.45	33°30.8'	119°16.2'	III-6	1941	1956	480	0-143	363	296
87.50	33°20.4'	119°39.8'	III-6	1613	1618	215	0-42	601	317
87.55	33°08.1'	120°00.5'	III-6	1306	1322	506	0-139	1447	767
87.60			Not occupied						
90.28	33°28.5'	117°46.7'	III-14	0611	0626	495	0-147	157	157
90.30	33°24.5'	117°55'	III-14	0406	0421	507	0-148	221	195
90.37	33°11'	118°23.5'	III-14	2335	2350	470	0-139	481	100
90.45	32°54.5'	118°56'	III-19	2216	2230	433	0-147	141	141
90.50	32°45'	119°17'	III-20	0300	0315	464	0-148	134	108
90.55	32°34.8'	119°36.8'	III-20	0600	0616	(479)	0-155	3355	1337
90.60	32°25'	119°57.5'	III-13	0616	0630	414	0-157	206	135
90.70	32°04.5'	120°39'	III-13	0001	0016	445	0-150	674	225
90.80	31°45'	121°19'	III-12	1831	1846	507	0-153	217	217
90.90	31°25'	121°59'	III-12	1256	1311	458	0-145	85	70
93.27			Occupied. Sample spoiled						
93.30	32°50'	117°31.5'	III-15	2015	2030	468	0-139	139	139
93.40			Occupied. Sample not quantitative						
93.50	32°12'	118°49'	III-16	0756	0811	(467)	0-149	214	214
93.60			Not occupied						
93.70			Not occupied						
97.30	32°16'	117°07.8'	III-21	0153	0201	163	0-47	424	424
97.35	32°05.5'	117°29'	III-20	2211	2226	508	0-148	181	138
97.40	31°56.5'	117°51'	III-20	1831	1846	472	0-148	104	104
97.50			Occupied. No biological data taken						

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
97.60			Not occupied						
97.70			Not occupied						
100.29	31°42'	116°43.5'	III-27	0206	0220	490	0-125	388	388
100.30	31°40.5'	116°46.5'	III-27	0041	0056	481	0-134	129	129
100.40	31°19.5'	117°24'	III-26	2016	2030	469	0-134	153	153
100.50	31°01'	118°08'	III-26	1516	1530	480	0-137	296	296
100.60	30°41'	118°47'	III-26	1026	1040	494	0-132	178	178
100.70	30°21'	119°25'	III-26	0531	0546	488	0-142	127	127
100.80	30°01'	120°07'	III-26	0046	0100	475	0-142	122	122
105.32	30°44'	116°23'	III-23	2216	2230	454	0-135	452	452
105.35	30°40'	116°33.5'	III-24	0021	0036	537	0-114	186	186
105.40	30°28.5'	116°54'	III-24	0321	0336	497	0-131	133	133
105.50	30°09'	117°34'	III-24	0821	0836	492	0-136	73	73
105.60	29°48'	118°15'	III-24	1311	1326	483	0-134	50	50
105.70	29°30'	118°55'	III-25	1100	1116	509	0-138	55	55
105.80	29°09'	119°34'	III-25	1606	1621	483	0-140	104	104
110.33	29°50.5'	115°52'	III-23	1518	1526	290	0-60	421	421
110.35	29°47'	116°00'	III-23	1341	1356	474	0-136	127	127
110.40	29°36.5'	116°18.5'	III-23	1106	1120	488	0-137	127	127
110.50	29°20'	116°58'	III-23	0631	0646	478	0-131	79	79
110.60	28°56'	117°38'	III-23	0126	0140	557	0-143	86	86
110.70	28°36'	118°18'	III-22	0511	0526	506	0-142	71	71
110.80			Not occupied						
110.90			Not occupied						
113.30	29°22.5'	115°17.8'	III-21	0209	0213	162	0-31	1022	1022
113.35	29°14'	115°42'	III-21	0531	0546	521	0-141	184	184
113.40	29°05'	116°00'	III-21	0815	0831	558	0-135	125	125
113.45	28°49'	116°19'	III-21	1101	1116	533	0-135	139	139
113.50	28°42'	116°37'	III-21	1241	1256	580	0-132	76	76
113.55	28°34'	116°53'	III-21	1721	1736	459	0-145	148	148
113.60	28°22'	117°16.5'	III-21	2050	2105	439	0-147	132	132
117.26	28°56'	114°41'	III-20	1819	1824	187	0-35	160	160
117.30	28°48'	114°56.5'	III-20	1603	1610	242	0-49	265	265
117.35	28°38'	115°16'	III-20	1336	1350	452	0-130	62	62
117.40	28°28'	115°36'	III-20	1031	1046	501	0-140	132	132
117.45	28°11'	116°04'	III-20	0046	0101	493	0-133	152	152
117.50	28°08'	116°15'	III-19	2236	2250	443	0-139	122	122
117.55	27°57'	116°34'	III-19	1921	1936	481	0-144	191	191
117.60	27°47.5'	116°54'	III-19	1701	1716	480	0-142	200	200
120.25	28°23'	114°14.3'	III-18	0328	0334	179	0-39	168	168
120.30	28°13'	114°34'	III-18	0603	0611	266	0-71	338	338
120.35	28°03'	114°54'	III-18	0838	0845	253	0-68	111	111
120.40	27°55.3'	115°17'	III-19	0008	0014	244	0-50	364	364
120.45	27°43'	115°33'	III-19	0336	0350	488	0-139	106	106
120.50	27°34.5'	115°49.5'	III-19	0621	0636	517	0-132	58	58

Plankton Volumes, Cruise 5303, March 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
120.55	27°22.5'	116°11.5'	III-19	0816	0830	480	0-139	79	79
120.60	27°10'	116°32.5'	III-19	1141	1155	474	0-138	17	17
120.70			Not occupied						
120.80			Not occupied						
120.90			Not occupied						
123.37	27°24'	114°40'	III-17	1733	1740	214	0-55	468	468
123.40	27°18'	114°51.5'	III-17	1602	1613	391	0-107	56	56
123.45	27°09.2'	115°11'	III-17	1216	1231	536	0-140	131	131
123.50	26°58.5'	115°32'	III-17	1016	1031	466	0-140	103	103
123.55	26°49'	115°50'	III-17	0641	0656	517	0-135	70	70
123.60	26°39'	116°10'	III-17	0421	0436	484	0-137	79	79
127.34	26°55'	114°06'	III-16	0022	0034	377	0-55	241	241
127.40	26°43'	114°28.5'	III-16	1136	1150	485	0-132	128	128
127.45	26°33.5'	114°48'	III-16	1351	1406	504	0-137	79	79
127.50	26°22'	115°06.5'	III-16	1706	1721	501	0-136	20	20
127.55	26°12'	115°27'	III-16	1911	1926	536	0-131	41	41
127.60	26°04'	115°46'	III-16	2226	2240	453	0-142	71	71
130.30	26°29'	113°29'	III-15	1948	1958	319	0-55	220	220
130.35	26°19'	113°48.5'	III-15	1631	1646	494	0-141	138	138
130.40	26°09'	114°07'	III-15	1331	1346	512	0-137	98	98
130.45	26°00'	114°27'	III-15	1011	1026	460	0-142	43	43
130.50	25°48'	114°45'	III-15	0751	0806	498	0-138	44	44
130.55	25°39'	115°05'	III-15	0426	0441	505	0-145	40	40
130.60	25°29'	115°24'	III-15	0206	0221	497	0-144	40	40
133.25	26°03'	112°46.5'	III-14	0333	0344	415	0-56	96	96
133.30	25°54.5'	113°07.5'	III-14	0651	0706	538	0-135	89	89
133.35	25°43.5'	113°26'	III-14	0906	0921	501	0-141	100	100
133.40	25°30'	113°49'	III-14	1236	1250	520	0-139	73	73
133.45	25°22'	114°06.5'	III-14	1436	1451	506	0-144	79	79
133.50	25°14'	114°24'	III-14	1741	1756	505	0-140	20	20
137.23	25°36'	112°20.5'	III-13	2303	2310	276	0-70	290	290
137.30	25°22.5'	112°45.5'	III-13	1900	1916	535	0-143	243	243
137.35	25°12'	113°05'	III-13	1551	1606	546	0-136	81	81
137.40	25°01'	113°24.5'	III-13	1316	1330	587	0-138	44	44
137.45	24°50'	113°43'	III-13	0942	0956	502	0-144	56	56
137.50	24°40'	114°02'	III-13	0656	0711	521	0-146	38	38

Plankton Volumes, Cruise 5303, Late March 1953

113.30	29°25'	115°18.7'	IV-5	0853	0904	344	0-56	70	70
113.35	29°16.5'	115°42'	IV-5	0646	0701	460	0-132	426	426
113.40	29°05.5'	116°01'	IV-5	0316	0331	(515)	0-125	97	97
113.45	28°54.5'	116°19'	IV-4	2311	2326	424	0-150	203	203
113.50	28°42'	116°37.5'	IV-4	1906	1921	509	0-128	216	216
113.55	28°32.5'	117°00'	IV-4	1701	1716	459	0-128	74	74

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
113.60	28°23'	117°20.5'	IV-4	1451	1506	457	0-133	110	110
113.70	28°02.5'	117°55.5'	IV-4	0911	0926	480	0-133	150	88
117.26	28°57'	114°42.5'	IV-3	0328	0339	(400)	0-46	600	600
117.30	28°48'	114°56.5'	IV-3	0558	0611	375	0-72	197	197
117.35	28°38.5'	115°17'	IV-3	0836	0851	567	0-110	81	81
117.40	28°29'	115°35'	IV-3	1141	1156	456	0-137	149	149
117.45	28°19'	115°55.5'	IV-3	1351	1405	475	0-122	232	232
117.50	28°09'	116°15'	IV-3	1706	1721	419	0-143	105	105
117.55	27°59'	116°34.9'	IV-3	1926	1941	(472)	0-138	144	144
117.60	27°48'	116°54'	IV-3	2256	2311	(469)	0-138	85	85
117.70	27°28.5'	117°32'	IV-4	0401	0416	432	0-147	51	51
120.25	28°23'	114°15'	IV-2	2244	2252	237	0-42	337	337
120.30	28°10.5'	114°32.6'	IV-2	1958	2009	343	0-54	385	385
120.35	28°03.1'	114°54'	IV-2	1713	1724	324	0-56	210	210
120.40	27°57'	115°16.5'	IV-2	0913	0924	362	0-50	718	718
120.45	27°43'	115°32'	IV-2	0701	0716	439	0-142	77	77
120.50	27°32'	115°51'	IV-2	0311	0326	522	0-130	69	69
120.55	27°26'	116°13'	IV-2	0016	0031	492	0-129	122	122
120.60	27°16.5'	116°32'	IV-1	2216	2231	455	0-138	79	79
120.70	26°56.2'	117°13'	IV-1	1716	1731	470	0-137	106	106
120.80	26°33'	118°01.5'	IV-1	1146	1201	505	0-120	40	40
120.90	26°12.9'	118°28'	IV-1	0711	0726	454	0-152	66	66
123.37	27°24'	114°39.6'	III-31	0423	0434	316	0-59	228	228
123.40	27°18'	114°51.5'	III-31	0701	0716	432	0-148	74	74
123.45	27°08'	115°11'	III-31	0916	0931	438	0-141	41	41
123.50	26°56'	115°30.5'	III-31	1236	1251	484	0-139	116	116
123.55	26°47.5'	115°49'	III-31	1451	1506	485	0-139	54	54
123.60	26°40'	116°08'	III-31	1811	1826	482	0-131	58	58
127.34	26°55.5'	114°06'	III-30	2304	2311	220	0-33	291	291
127.40	26°43.9'	114°27'	III-30	1926	1941	430	0-161	74	74
127.45	26°35.2'	114°50'	III-30	1636	1651	500	0-141	60	60
127.50	26°29'	115°04.5'	III-30	1330	1346	473	0-142	34	34
127.55	26°10'	115°35'	III-30	0921	0936	460	0-143	24	24
127.60	26°02'	115°51'	III-30	0646	0701	539	0-143	44	44
130.30	26°30'	113°29.5'	III-29	0553	0604	393	0-53	331	331
130.35	26°19'	113°48.5'	III-29	0911	0926	467	0-144	492	492
130.40	26°09'	114°10'	III-29	1256	1310	439	0-140	150	150
130.45	25°59'	114°27'	III-29	1516	1531	420	0-146	71	71
130.50	25°46.5'	114°53.5'	III-29	1841	1856	466	0-146	150	150
130.55	25°38'	115°10'	III-29	2046	2101	467	0-154	77	77
130.60	25°30'	115°25'	III-30	0101	0116	444	0-153	54	54
133.25	26°05'	112°51.2'	III-29	0027	0039	367	0-54	136	136
133.30	25°58'	113°04.3'	III-28	2218	2231	423	0-74	109	109
133.35	25°45.5'	113°26'	III-28	1856	1911	539	0-131	115	115
133.40	25°35.3'	113°44.5'	III-28	1641	1656	419	0-151	48	48

Plankton Volumes, Cruise 5303, Late March 1953 (cont'd)

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
133.45	25°21'	114°05.4'	III-28	1236	1251	426	0-150	38	38
133.50	25°11'	114°26.6'	III-28	1001	1016	480	0-139	46	46
133.55	25°04.5'	114°44'	III-28	0641	0656	440	0-149	64	64
133.60	24°55'	115°01'	III-28	0421	0436	479	0-142	96	96
137.23	25°34.5'	112°18.5'	III-27	0238	0245	(252)	0-48	436	436
137.30	25°19.1'	112°44.3'	III-27	0639	0656	588	0-137	68	68
137.35	25°09'	113°06'	III-27	0901	0917	559	0-135	50	50
137.40	24°58'	113°22.5'	III-27	1216	1230	501	0-145	60	60
137.45	24°50'	113°42.5'	III-27	1446	1501	526	0-126	49	49
137.50	24°37'	114°05.5'	III-27	1801	1816	504	0-134	40	40
137.55	24°28'	114°23'	III-27	2016	2031	499	0-129	64	64
137.60	24°20'	114°40'	III-27	2311	2326	457	0-148	46	46

Plankton Volumes, Cruise 5304, April 1953

60.55	37°47.5'	123°14.9'	IV-18	0920	0929	251	0-86	119	119
60.60	37°37.8'	123°36.1'	IV-18	0616	0631	379	0-141	74	74
60.70	37°18.5'	124°21.1'	IV-18	0109	0124	350	0-115	337	280
60.80	36°57'	125°04'	IV-17	2021	2035	589	0-102	1083	1029
60.90	36°40.9'	125°43'	IV-17	1536	1551	524	0-119	596	565
63.52	37°19.4'	122°35'	IV-18	1514	1522	262	0-70	206	168
63.55	37°14.5'	122°48.1'	IV-18	1326	1341	520	0-118	453	88
67.50	36°48.5'	122°04'	IV-18	1911	1926	610	0-111	230	230
67.55	36°38.8'	122°25.9'	IV-18	2206	2220	555	0-117	299	299
70.51	36°10'	121°45.2'	IV-16	0519	0533	502	0-144	92	92
70.55	36°02.8'	122°01.8'	IV-16	0836	0851	466	0-140	223	223
70.60	35°49.4'	122°24.7'	IV-16	1136	1150	577	0-120	416	416
70.70	35°34'	123°04.8'	IV-16	1616	1630	522	0-131	587	345
70.80			Occupied. Sample not quantitative						
70.90	34°54.6'	124°33'	IV-17	0251	0305	467	0-146	291	291
73.50	35°37.4'	121°16.6'	IV-16	0048	0056	325	0-72	430	31
73.60	35°18.2'	121°56.6'	IV-15	2016	2030	510	0-147	765	765
77.50	35°04.5'	120°51.5'	IV-15	0711	0722	366	0-110	33	33
77.55	34°54.6'	121°12.8'	IV-15	1016	1029	519	0-110	224	224
77.65	34°35.2'	121°54'	IV-15	1501	1516	525	0-133	1273	1212
80.51	34°34.5'	120°44.6'	IV-15	0308	0316	271	0-78	163	163
80.55	34°28.5'	120°57.6'	IV-15	0041	0055	474	0-144	594	594
80.60	34°12.3'	121°15.8'	IV-14	2126	2140	514	0-128	420	366
80.70	33°49'	121°44.3'	IV-14	1616	1630	507	0-141	150	150
80.80	33°29.5'	122°31'	IV-14	0943	0957	455	0-151	193	193
80.90	33°03.8'	123°12.1'	IV-14	0356	0411	510	0-140	282	282
80.100	32°49.8'	123°53'	IV-13	2226	2241	542	0-126	63	63
80.110	32°30'	124°39.8'	IV-13	1706	1720	474	0-144	84	84
80.120	32°10.6'	125°15'	IV-13	1241	1256	538	0-132	37	37

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
80.130	31°54'	125°48'	IV-13	0817	0831	488	0-136	107	107
80.138	31°35.2'	126°21'	IV-13	0349	0432	1510	0-364	33	33
80.145	31°18.6'	126°56.7'	IV-13	0026	0041	678	0-114	41	41
80.152	31°04.4'	127°26.1'	IV-12	1940	2021	1476	0-379	24	24
80.160	30°48'	127°58'	IV-12	1616	1631	529	0-139	57	57
83.40			Occupied. Surface tow taken						
83.40E	34°14'	119°22'	IV-30	1037	1043	201	0-21	109	109
83.43	34°08'	119°34'	IV-17	1456	1511	456	0-142	359	359
83.43E	34°08.6'	119°31.6'	IV-30	1226	1241	307	0-148	339	339
83.48	33°58.8'	119°55.2'	IV-17	0748	0756	288	0-64	104	104
83.48E	33°58.3'	119°55'	IV-30	1651	1706	414	0-157	386	386
83.51	33°52'	120°07'	IV-17	0532	0543	437	0-100	544	190
83.55	33°39.7'	120°14.5'	IV-17	0226	0241	439	0-147	424	424
83.60	33°30.2'	120°39.1'	IV-16	2236	2251	451	0-136	1141	1030
83.70	33°12.5'	121°25.5'	IV-16	1521	1536	474	0-142	112	112
83.80	32°53.5'	122°07'	IV-16	0826	0841	527	0-142	148	135
83.90	32°34.5'	122°48'	IV-16	0136	0151	504	0-147	278	278
85.39	33°59.5'	119°02.5'	IV-13	0648	0656	268	0-70	250	250
85.39E	34°00'	119°04.5'	IV-30	0631	0646	432	0-152	440	440
85.40	33°56.3'	119°10.2'	IV-13	0441	0456	513	0-142	216	187
85.40E	33°57'	119°10.5'	IV-30	0346	0401	429	0-155	434	434
85.45	33°46.2'	119°32.6'	IV-12	2341	2356	546	0-139	223	165
85.45E	33°47'	119°31.2'	IV-29	2156	2211	494	0-149	696	291
85.50	33°34.8'	119°45'	IV-12	1900	1916	566	0-135	415	415
85.50E	33°37'	119°52'	IV-29	1736	1751	497	0-128	278	177
85.55	33°26.2'	120°09.6'	IV-12	1321	1336	507	0-145	270	239
85.55E	33°27'	120°12.5'	IV-29	1416	1430	470	0-149	459	459
85.60	33°12'	120°33.7'	IV-12	0756	0811	445	0-137	693	481
87.35	33°49.3'	118°35.7'	IV-13	1041	1055	456	0-133	77	77
87.35E	33°49.8'	118°38'	V-1	0226	0241	429	0-141	331	331
87.40	33°40.9'	119°01.8'	IV-14	0641	0655	470	0-143	96	96
87.45	33°31.7'	119°20'	IV-14	1011	1025	579	0-132	178	112
87.50	33°21.3'	119°39.5'	IV-14	1338	1346	261	0-63	1508	261
87.55	33°07.5'	120°03'	IV-14	1731	1746	457	0-143	587	407
87.60	32°55.5'	120°24'	IV-14	2211	2226	691	0-131	1583	236
87.70	32°32.2'	121°04'	IV-15	0506	0521	530	0-136	452	422
87.80	32°09.5'	121°44'	IV-15	1251	1306	533	0-146	154	143
87.90	32°00'	122°24'	IV-15	1836	1851	494	0-147	524	524
90.28	33°28.6'	117°47.8'	IV-7	2211	2226	459	0-147	118	118
90.30	33°25.4'	117°55.4'	IV-8	0026	0041	502	0-125	319	319
90.37	33°11'	118°23.8'	IV-8	0521	0536	612	0-109	82	82
90.45	32°53.7'	118°57.4'	IV-8	1101	1115	488	0-139	66	66
90.50			Occupied. Sample spoiled						
90.55	32°33'	119°37.7'	IV-8	1846	1900	503	0-138	646	646
90.60	32°24.5'	119°55.3'	IV-8	2206	2220	470	0-144	3247	3247

Plankton Volumes, Cruise 5304, April 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
90.70	32°08.6'	120°46.1'	IV-9	0351	0406	530	0-121	106	106
90.80	31°44.8'	121°18.5'	IV-9	0818	0829	426	0-135	141	141
90.90	31°22'	122°05.4'	IV-9	1356	1411	506	0-143	75	75
90.100	31°06.1'	122°38.7'	IV-9	1801	1815	535	0-130	82	82
90.110	30°45.5'	123°20.5'	IV-9	2356	0020	581	0-106	72	72
90.120	30°26'	124°05'	IV-10	0531	0546	453	0-140	252	252
90.130	30°04'	124°39.2'	IV-10	1041	1056	462	0-155	26	26
90.138	29°48'	125°13.4'	IV-10	1346	1422	1237	0-310	18	18
90.145	29°36.4'	125°40.5'	IV-10	1801	1815	502	0-127	56	56
90.160	29°07'	126°42'	IV-11	0141	0155	526	0-136	23	23
93.27	32°56'	117°19'	IV-7	1656	1710	445	0-138	321	321
93.30	32°50'	117°31.5'	IV-7	1916	1931	463	0-129	646	171
93.35	32°40'	117°52.3'	IV-7	2136	2151	462	0-138	99	99
93.40	32°30'	118°12.5'	IV-8	0056	0111	474	0-137	165	165
93.45	32°20'	118°33'	IV-8	0321	0336	429	0-135	184	184
93.50	32°07.5'	118°59'	IV-8	0711	0726	422	0-145	346	346
93.55	32°00'	119°15'	IV-8	0906	0920	430	0-140	130	130
93.60	31°50'	119°34'	IV-8	1226	1241	491	0-123	77	77
93.70	31°33'	120°21'	IV-8	1821	1836	446	0-140	548	548
93.80	31°13'	120°56'	IV-8	2336	2350	386	0-140	83	83
93.90	30°55.5'	121°32.5'	IV-9	0706	0720	430	0-143	63	63
97.30	32°16'	117°09'	IV-10	2038	2044	172	0-49	175	175
97.35	32°05.5'	117.29'	IV-10	1825	1840	452	0-146	113	113
97.40	31°55'	117°50'	IV-10	1456	1511	445	0-138	126	126
97.45	31°39.5'	118°09'	IV-10	1121	1136	382	0-147	121	121
97.50	31°27'	118°26'	IV-10	0906	0920	407	0-130	177	177
97.55	31°19'	118°45'	IV-10	0536	0550	459	0-132	961	961
97.60	31°09'	119°06.8'	IV-10	0316	0331	429	0-135	373	238
97.70	30°55'	119°51'	IV-9	2141	2156	447	0-133	224	224
97.80	30°37'	120°28'	IV-9	1626	1640	440	0-141	41	41
97.90	30°22'	121°08.5'	IV-9	1141	1156	429	0-146	54	54
100.29	31°42'	116°43.5'	IV-11	0108	0116	242	0-68	206	206
100.30	31°40.5'	116°47'	IV-11	0221	0236	440	0-138	357	357
100.35	31°29'	117°08.5'	IV-11	0506	0520	438	0-136	128	128
100.40	31°20'	117°29'	IV-11	0836	0850	417	0-143	60	60
100.45	31°12'	117°46'	IV-11	1031	1046	407	0-138	255	255
100.50	31°02'	118°07'	IV-11	1406	1421	434	0-133	189	189
100.55	30°54'	118°23'	IV-11	1616	1630	411	0-144	338	338
100.60	30°42.5'	118°48'	IV-11	2016	2030	471	0-134	633	280
100.70	30°22'	119°28'	IV-12	0242	0256	458	0-128	131	131
100.80	30°02'	120°08'	IV-12	0741	0756	491	0-133	45	45
100.90	29°39'	120°49'	IV-12	1256	1311	468	0-129	49	49
103.30	31°05.5'	116°24.5'	IV-14	0358	0406	223	0-65	108	108
103.35	30°52'	116°43'	IV-14	0102	0116	483	0-135	106	106
103.40	30°44.5'	117°04.3'	IV-13	2141	2156	479	0-131	71	71

Plankton Volumes, Cruise 5304, April 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.45	30°38'	117°23'	IV-13	1841	1856	503	0-126	151	151
103.50	30°27'	117°46'	IV-13	1616	1631	481	0-131	69	69
103.55	30°19'	118°05'	IV-13	1321	1336	450	0-136	73	73
103.60	30°09'	118°27'	IV-13	1131	1146	454	0-141	119	119
103.70	29°48'	119°07'	IV-13	0636	0650	469	0-135	51	51
103.80	29°27'	119°45.5'	IV-13	0116	0131	478	0-126	69	69
103.90	29°04'	120°25'	IV-12	1956	2011	486	0-131	60	60
107.32	30°26'	116°10.5'	IV-14	0821	0836	448	0-138	259	259
107.35	30°20'	116°23'	IV-14	1026	1041	474	0-128	93	93
107.40	30°10.5'	116°43.5'	IV-14	1336	1351	438	0-136	52	52
107.45	30°01'	117°02.5'	IV-14	1751	1805	447	0-136	34	34
107.50	29°50.5'	117°23.5'	IV-14	1921	1935	448	0-138	294	67
107.55	29°39'	117°44'	IV-14	2141	2156	429	0-145	135	135
107.60	29°27.5'	118°05.5'	IV-15	0106	0121	467	0-130	77	77
107.70	29°11'	118°43'	IV-15	2121	2136	469	0-128	175	175
107.80	28°53'	119°18.5'	IV-16	0406	0421	467	0-131	62	62
107.90	28°28'	120°05'	IV-16	1101	1116	438	0-144	18	18
110.33	29°49.5'	115°53.5'	IV-17	2357	0008	342	0-102	576	576
110.35	29°46'	116°00'	IV-17	2251	2306	468	0-113	282	282
110.40	29°36.5'	116°19.5'	IV-17	1926	1941	357	0-149	230	230
110.45	29°29'	116°37.5'	IV-17	1656	1711	406	0-151	131	131
110.50	29°18'	117°00'	IV-17	1446	1501	430	0-138	81	81
110.55	29°07'	117°21'	IV-17	1121	1136	450	0-135	80	80
110.60	28°58'	117°40'	IV-17	0916	0930	426	0-141	77	77
110.70	28°36'	118°24'	IV-17	0356	0410	444	0-142	180	95
110.80	28°17'	118°59'	IV-16	2226	2240	496	0-130	61	61
110.90	27°56.5'	119°37'	IV-16	1546	1600	453	0-138	20	20
113.30	29°21.5'	115°18'	IV-15	0538	0547	267	0-40	1931	1931
113.35	29°12'	115°40'	IV-15	0141	0156	605	0-121	165	165
113.40	29°02'	115°58.8'	IV-14	2231	2246	458	0-145	240	240
113.45	28°54'	116°19'	IV-14	2026	2041	458	0-134	74	74
113.50	28°44.3'	116°39'	IV-14	1736	1751	454	0-139	128	128
113.55	28°34'	116°59'	IV-14	1526	1541	469	0-137	100	100
113.60	28°25'	117°19'	IV-14	1256	1311	451	0-140	111	111
113.70	28°02'	117°55'	IV-14	0831	0846	487	0-136	86	86
117.26	28°56.3'	114°41'	IV-13	0744	0752	248	0-40	149	149
117.30	28°48.2'	114°56.2'	IV-13	0948	1001	415	0-67	761	761
117.35	28°38'	115°16'	IV-13	1201	1216	490	0-132	457	457
117.40	28°28'	115°36.1'	IV-13	1416	1431	480	0-139	158	158
117.45	28°18'	115°55.5'	IV-13	1656	1711	449	0-130	180	180
117.50	28°07.4'	116°16.6'	IV-13	1941	1956	433	0-137	104	104
117.55	27°58'	116°34'	IV-13	2126	2141	469	0-133	169	169
117.60	27°48.2'	116°54'	IV-13	2346	0001	486	0-126	121	121
117.70	27°30'	117°33.5'	IV-14	0401	0416	477	0-139	48	48
120.25	28°23.2'	114°15.5'	IV-13	0328	0337	250	0-36	1058	1058

Plankton Volumes, Cruise 5304, April 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
120.30	28°14.6'	114°35.5'	IV-13	0058	0109	350	0-47	395	395
120.35	28°03'	114°54'	IV-12	2223	2234	319	0-51	420	420
120.40	27°55.5'	115°15'	IV-12	2021	2027	188	0-27	330	330
120.45	27°43.3'	115°33.4'	IV-12	1716	1731	492	0-134	89	89
120.50	27°33.8'	115°52.5'	IV-12	1356	1411	482	0-136	83	83
120.55	27°17'	116°07'	IV-12	1126	1141	468	0-133	96	96
120.60	27°12.2'	116°29.5'	IV-12	0841	0856	491	0-132	98	98
120.70	26°59'	117°10'	IV-12	0326	0341	603	0-109	41	41
120.80	26°37'	117°51'	IV-11	2231	2246	492	0-131	41	41
120.90	26°16'	118°31'	IV-11	1721	1736	545	0-137	33	33
123.37	27°24.2'	114°39.8'	IV-10	1653	1702	287	0-39	891	891
123.40	27°18.3'	114°51.2'	IV-10	1826	1841	443	0-132	557	557
123.45	27°08.7'	115°10'	IV-10	2126	2141	484	0-121	271	271
123.50	26°58'	115°30.5'	IV-10	2336	2351	466	0-133	77	77
123.55	26°48'	115°51'	IV-11	0256	0311	556	0-127	49	49
123.60	26°36.9'	116°13'	IV-11	0511	0527	520	0-146	35	35
127.34	26°55.2'	114°06'	IV-10	1213	1224	344	0-55	268	268
127.40	26°43.2'	114°28.2'	IV-10	0851	0906	445	0-142	94	94
127.45	26°34.1'	114°48'	IV-10	0626	0641	482	0-134	39	39
127.50	26°24.2'	115°07'	IV-10	0326	0341	532	0-120	90	90
127.55	26°13.5'	115°27'	IV-10	0111	0126	504	0-121	137	137
127.60	26°04'	115°47'	IV-9	2206	2221	486	0-134	62	62
130.30	26°30.5'	113°29.5'	IV-9	0013	0024	364	0-50	358	358
130.35	26°19.2'	113°48.5'	IV-9	0226	0241	482	0-127	139	139
130.40	26°10'	114°06'	IV-9	0501	0516	488	0-133	178	164
130.45	25°58'	114°32'	IV-9	0826	0841	487	0-129	443	443
130.50	25°49'	114°46.5'	IV-9	1036	1051	485	0-133	91	91
130.55	25°38.5'	115°05'	IV-9	1416	1430	548	0-121	128	128
130.60	25°22'	115°34'	IV-9	1626	1641	506	0-134	14	14
133.25	26°05.3'	112°48.6'	IV-8	1943	1954	321	0-61	209	209
133.30	25°54.5'	113°07.5'	IV-8	1711	1726	444	0-142	106	106
133.35	25°45'	113°27'	IV-8	1456	1511	453	0-144	86	86
133.40	25°35'	113°47'	IV-8	1141	1156	454	0-146	150	150
133.45	25°25'	114°03'	IV-8	0941	0956	456	0-132	50	50
133.50	25°15'	114°20'	IV-8	0656	0711	392	0-144	145	145
133.55	25°04.5'	114°42.5'	IV-8	0456	0511	441	0-134	66	66
133.60	24°55'	115°01'	IV-8	0156	0211	446	0-136	112	112
137.23	25°33'	112°17.7'	IV-7	0403	0414	385	0-51	161	161
137.30	25°20'	112°45.8'	IV-7	0656	0711	477	0-142	69	69
137.35	25°10'	113°04.8'	IV-7	0926	0941	475	0-140	101	101
137.40	25°02.6'	113°23.4'	IV-7	1146	1200	487	0-136	37	37
137.45	24°51'	113°43'	IV-7	1426	1441	381	0-151	32	32
137.50	24°39.5'	114°03'	IV-7	1631	1646	458	0-145	28	28
137.55	24°29.9'	114°21'	IV-7	1921	1936	500	0-128	816	36
137.60	24°20'	114°39.5'	IV-7	2126	2141	473	0-137	46	46

Plankton Volumes, Cruise 5305, May 1953

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	Total cc.	Sm.org. cc.
60.55	37°47.5'	123°15'	V-6	1652	1703	366	0-103	191	191
60.60	37°37'	123°36.5'	V-6	1411	1426	500	0-132	160	160
60.65	37°30'	124°01'	V-6	1121	1136	359	0-140	630	630
60.70	37°18'	124°19'	V-6	0916	0931	446	0-122	574	574
60.80	36°56.5'	125°04'	V-6	0411	0426	488	0-126	705	705
60.90	36°37'	125°47'	V-5	2243	2258	432	0-139	597	597
60.100	36°17'	126°14'	V-5	1846	1900	501	0-128	419	300
60.110			Occupied. Sample not quantitative						
60.120	35°37'	127°55'	V-5	0836	0851	515	0-124	459	459
63.52	37°18.5'	122°37'	V-6	2033	2041	269	0-64	134	134
63.55	37°13'	122°49'	V-6	2211	2226	478	0-131	907	907
63.60			Occupied. Sample not quantitative						
63.65	36°53'	123°32'	V-7	0306	0320	463	0-132	798	798
67.50			Not occupied						
67.55			Not occupied						
67.65			Occupied. Sample not quantitative						
70.51	36°10.3'	121°46'	V-3	0917	0932	493	0-137	110	110
70.55			Occupied. Sample not quantitative						
70.60			Occupied. Sample not quantitative						
70.65	35°39.5'	122°49'	V-3	1806	1820	441	0-127	342	342
70.70	35°31.5'	123°05'	V-3	2106	2121	479	0-126	226	226
70.80	35°13'	123°47'	V-4	0306	0320	490	0-132	245	245
70.90	34°56'	124°32'	V-4	0756	0811	477	0-127	415	415
70.100	34°40'	125°13'	V-4	1151	1206	535	0-110	123	123
70.110	34°20'	125°55'	V-4	1646	1700	517	0-111	259	259
70.120			Occupied. Sample not quantitative						
73.50			Occupied. Sample not quantitative						
73.55			Occupied. Sample not quantitative						
73.60			Occupied. Sample not quantitative						
77.50	35°04.5'	120°52'	V-2	0736	0749	424	0-133	123	123
77.55	34°56'	121°14'	V-2	1051	1106	443	0-148	481	481
77.60	34°44'	121°35'	V-2	1316	1330	449	0-139	308	308
77.65			Occupied. Sample not quantitative						
80.51	34°26.5'	120°32.5'	V-11	1838	1846	260	0-66	370	370
80.55	34°20'	120°47.5'	V-11	1536	1551	421	0-138	180	180
80.60	34°09.1'	121°10.8'	V-11	1156	1211	604	0-104	431	431
80.70	33°48.7'	121°53'	V-11	0626	0641	461	0-145	781	781
80.80	33°28'	122°33'	V-11	0126	0141	481	0-147	582	582
80.90	33°06'	123°01.6'	V-10	2021	2035	489	0-137	583	83
80.100	32°30.7'	123°57.4'	V-10	1156	1211	652	0-85	31	31
80.110	32°25'	124°27'	V-10	0756	0811	452	0-148	44	44
80.120	32°06.2'	125°16'	V-10	0156	0211	518	0-125	42	42
80.130	31°45.8'	126°01'	V-9	1956	2011	450	0-136	53	53
80.138	31°31'	126°28'	V-9	1651	1706	503	0-132	36	36
80.145	31°13.2'	127°00'	V-9	1211	1226	495	0-134	40	40
80.153	31°00'	127°29.6'	V-9	0846	0900	464	0-140	30	30

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
80.160	30°46.1'	127°59.1'	V-9	0436	0451	476	0-145	46	46
83.40	34°14'	119°22'	V-14	1929	1932	99	0-20	162	162
83.40E	34°14.4'	119°22'	V-27	1332	1344	470	0-10	98	98
83.43	34°08.2'	119°36'	V-14	1726	1741	506	0-123	811	811
83.43E	34°08'	119°34'	V-27	1126	1141	574	0-108	265	265
83.48	33°58.3'	119°55'	V-16	0128	0137	391	0-54	992	992
83.48E	33°59.3'	119°55.4'	V-28	0918	0925	229	0-50	411	411
83.51	33°52'	120°09'	V-16	0341	0356	489	0-145	168	168
83.51E	33°52.3'	120°08'	V-28	1128	1136	318	0-58	101	101
83.55	33°44.7'	120°24.5'	V-16	0611	0626	497	0-121	209	209
83.55E	33°44'	120°24.5'	V-28	1426	1441	504	0-132	274	274
83.60	33°36.2'	120°46'	V-16	0941	0956	467	0-135	154	154
83.60E	33°34.7'	120°43.1'	V-28	1756	1811	393	0-160	555	555
83.70	33°13.8'	121°26.8'	V-16	1456	1511	507	0-123	146	146
83.80	32°54.8'	122°11'	V-16	2001	2016	619	0-103	313	313
83.90	32°35'	122°47.4'	V-17	0026	0041	470	0-134	213	149
85.39	34°00.2'	119°04'	V-14	2146	2201	468	0-143	828	828
85.39E	34°00'	119°04'	V-27	1726	1744	526	0-131	318	318
85.40	33°56.3'	119°10.8'	V-15	1636	1650	445	0-144	2613	256
85.40E	33°56.5'	119°10.2'	V-27	2031	2046	497	0-110	765	765
85.45	33°46.7'	119°31'	V-15	2101	2116	514	0-132	818	818
85.45E	33°47'	119°33.3'	V-27	0510	0526	359	0-171	788	788
85.50	33°38.7'	119°55.6'	V-14	1106	1121	516	0-121	244	186
85.50E	33°34.8'	119°50.4'	V-26	2351	0005	512	0-135	774	774
85.55	Occupied. Sample not quantitative								
85.55E	33°25.8'	120°11.4'	V-26	1931	1945	612	0-131	504	504
85.60	33°17'	120°33.5'	V-14	0241	0256	471	0-143	701	701
85.60E	33°16.8'	120°33.3'	V-26	1511	1526	504	0-143	853	853
87.35	33°51.1'	118°36.4'	V-18	1133	1140	234	0-34	299	171
87.35E	33°49'	118°37.7'	V-29	1546	1600	412	0-134	428	428
87.40	33°40'	118°58.5'	V-18	0836	0850	521	0-79	844	844
87.40E	33°40'	118°58.5'	V-29	1251	1306	522	0-130	345	345
87.45	33°30.2'	119°20.4'	V-18	0546	0601	532	0-101	632	576
87.45E	33°30.5'	119°18'	V-29	0941	0956	468	0-136	602	602
87.50	33°21.2'	119°37.5'	V-18	0318	0326	325	0-53	2037	2037
87.50E	33°20'	119°39.3'	V-29	0628	0634	128	0-57	2390	2390
87.55	33°00.8'	119°59.5'	V-17	2311	2325	552	0-120	304	304
87.55E	33°12.5'	119°55.5'	V-29	0326	0341	412	0-138	682	682
87.60	32°55.9'	120°23.9'	V-17	2006	2021	477	0-139	817	817
87.60E	33°01.8'	120°18'	V-28	2336	2351	482	0-141	305	305
87.70	32°41'	121°01.7'	V-17	1551	1605	563	0-113	696	163
87.80	32°10'	121°44.5'	V-17	0956	1010	529	0-120	284	284
87.90	31°57.2'	122°17.1'	V-17	0606	0621	491	0-129	277	134
90.28	33°28.5'	117°46.6'	V-5	1928	1934	243	0-32	872	872
90.30	33°23.1'	117°55.3'	V-5	2116	2131	660	0-80	1762	248
90.35	33°13.8'	118°16'	V-6	0126	0141	1071	0-113	570	570

Plankton Volumes, Cruise 5305, May 1953 (cont'd)

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
90.41	33°02.8'	118°40'	V-6	0456	0511	509	0-123	197	197
90.45	32°54.6'	118°56.4'	V-6	0646	0701	440	0-143	1201	1201
90.50	32°46.3'	119°16.8'	V-6	1016	1030	470	0-136	128	128
90.55	32°35.1'	119°41'	V-6	1256	1310	432	0-117	278	278
90.60	32°25'	119°57.7'	V-6	1426	1441	465	0-137	914	914
90.70	32°03'	120°39'	V-6	1926	1941	549	0-103	255	255
90.80	31°42'	121°20'	V-7	0106	0121	365	0-137	1498	1498
90.90	31°25'	121°59'	V-7	0551	0606	514	0-127	354	159
90.100	31°08'	122°42'	V-7	1026	1041	478	0-134	477	59
90.110	30°46.7'	123°19.2'	V-7	1512	1526	482	0-138	58	58
90.120	30°24.9'	124°01'	V-7	2016	2030	509	0-124	149	149
90.130	30°02.7'	124°43.4'	V-8	0111	0126	461	0-141	69	69
90.139	29°46.7'	125°14.5'	V-8	0556	0610	488	0-137	62	62
90.145	29°33.5'	125°40'	V-8	0856	0911	426	0-161	99	99
90.153	29°18.5'	126°08.9'	V-8	1246	1301	511	0-126	35	35
90.160	29°03.8'	126°41'	V-8	1536	1551	576	0-110	35	35
93.27	32°56'	117°19'	V-6	1726	1739	460	0-106	130	130
93.30	32°50'	117°31.2'	V-6	2156	2211	615	0-117	936	936
93.35	32°42'	117°49'	V-7	0033	0051	668	0-140	314	314
93.40	32°30'	118°12.7'	V-7	0446	0500	514	0-114	408	136
93.45	32°17'	118°34'	V-7	0726	0741	590	0-126	932	932
93.50	32°10'	118°53.2'	V-7	1216	1231	534	0-141	487	487
93.60	31°50'	119°34'	V-9	0802	0816	530	0-125	1454	1454
93.70			Not occupied.						
93.80			Not occupied.						
93.90			Not occupied.						
97.30	32°15.3'	117°08'	V-10	2158	2208	301	0-56	861	364
97.35	32°05'	117°29.2'	V-10	1910	1925	535	0-133	983	983
97.40	31°55.4'	117°50.4'	V-10	1254	1310	487	0-139	390	390
97.45	31°41'	118°07'	V-10	0920	0936	452	0-149	389	221
97.50	31°35.6'	118°30.2'	V-10	0641	0655	463	0-150	1316	1316
97.60	31°15.3'	119°10.7'	V-9	2056	2111	487	0-160	1960	1960
97.70	30°55'	119°50.4'	V-9	1416	1431	511	0-144	176	176
97.80			Not occupied.						
97.90			Not occupied.						
100.29	31°42.2'	116°43.4'	V-11	0317	0327	301	0-79	345	345
100.30	31°40.3'	116°46.5'	V-11	0505	0520	518	0-133	290	290
100.35	31°30'	117°09'	V-11	0739	0755	528	0-135	140	140
100.40	31°21.5'	117°27'	V-11	1209	1225	474	0-145	101	101
100.45	31°14'	117°45.5'	V-11	1436	1451	470	0-149	362	362
100.50	31°01'	118°07'	V-11	1841	1856	527	0-130	171	171
100.55	30°53'	118°29'	V-11	2137	2150	460	0-150	565	565
100.60	30°41'	118°47'	V-12	0136	0151	473	0-145	435	435
100.70	30°20'	119°27'	V-12	0752	0806	433	0-139	1893	1893
100.80	30°01'	120°07'	V-12	1316	1331	479	0-144	58	58
100.90	29°40'	120°47'	V-12	1846	1900	479	0-145	67	67

Plankton Volumes, Cruise 5305, May 1953 (cont'd)

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.30	31°05'	116°25'	V-14	1028	1035	232	0-54	215	215
103.35	30°55'	116°45'	V-14	0641	0655	468	0-135	227	227
103.40	30°45.3'	117°05.2'	V-14	0311	0326	474	0-142	338	127
103.45	30°35.5'	117°24'	V-14	0026	0040	513	0-133	176	176
103.50	30°25'	117°45.4'	V-13	2111	2125	494	0-142	97	97
103.55	30°16'	118°06.5'	V-13	1902	1915	439	0-138	502	502
103.60	30°06.3'	118°25.4'	V-13	1556	1610	474	0-135	548	548
103.70	29°46'	119°05.5'	V-13	1030	1045	510	0-141	63	63
103.80	29°26'	119°45.5'	V-13	0521	0535	525	0-128	57	57
103.90	29°06'	120°25.5'	V-12	2341	2355	471	0-141	55	55
107.32	30°25.4'	116°11.2'	V-14	1541	1555	465	0-142	155	155
107.35	30°20'	116°23.2'	V-14	1756	1810	501	0-130	140	140
107.40	30°10.3'	116°43.2'	V-14	2116	2130	412	0-147	413	413
107.45	30°01'	117°04'	V-15	0006	0021	455	0-139	1473	1473
107.50	29°50.5'	117°23.5'	V-15	0236	0250	462	0-143	303	303
107.55	29°41'	117°42.5'	V-15	0556	0610	449	0-152	578	578
107.60	29°31.2'	118°03.4'	V-15	0906	0920	450	0-147	67	67
107.70	29°11'	118°43'	V-15	1402	1416	466	0-139	73	73
107.80	28°51'	119°22.3'	V-15	2041	2055	491	0-138	114	114
107.90	28°32'	120°01.2'	V-16	0236	0250	458	0-145	52	52
110.33			Occupied. Sample not quantitative						
110.35	29°46.2'	116°00'	V-17	1846	1901	431	0-147	348	348
110.40	29°36.5'	116°19.4'	V-17	1541	1556	493	0-140	304	304
110.45	29°29'	116°37.5'	V-17	1221	2135	531	0-139	139	139
110.50	29°16.5'	116°59'	V-17	0951	1005	493	0-137	24	24
110.55	29°05'	117°20'	V-17	0512	0525	484	0-144	58	58
110.60	28°56'	117°39.2'	V-17	0235	0250	488	0-140	70	70
110.70	28°36.3'	118°18.2'	V-16	1936	1950	485	0-134	41	41
110.80	28°16.4'	118°57.4'	V-16	1309	1326	577	0-139	69	69
110.90	27°56.5'	119°36'	V-16	0740	0755	510	0-132	63	63
113.30	29°20.5'	115°19.5'	V-20	1158	1206	261	0-60	621	353
113.35	29°11'	115°38.5'	V-20	0841	0856	491	0-132	1054	1054
113.40	29°01.8'	115°58'	V-20	0446	0501	436	0-136	202	202
113.45	28°51.2'	116°17'	V-20	0041	0056	461	0-138	312	312
113.50	28°42'	116°37'	V-19	2131	2146	522	0-122	376	376
113.55	28°31.5'	116°56.5'	V-19	1736	1750	466	0-144	195	195
113.60	28°21.8'	117°16.2'	V-19	1436	1450	531	0-126	75	75
113.70	27°59'	117°53'	V-19	0801	0815	460	0-134	39	39
117.26	28°57'	114°40.2'	V-17	2148	2156	246	0-57	2896	2896
117.30	28°48'	114°55'	V-18	0022	0033	379	0-84	525	525
117.35	28°36.5'	115°15'	V-18	0356	0411	516	0-122	237	237
117.40	28°26'	115°35.8'	V-18	0726	0741	506	0-134	202	202
117.45	28°16.5'	115°55'	V-18	1006	1021	462	0-133	305	305
117.50	28°07.5'	116°15'	V-18	1331	1346	438	0-120	354	192
117.55	27°58'	116°34'	V-18	1606	1620	476	0-125	147	147
117.60	27°48'	116°53.5'	V-18	1931	1946	524	0-125	69	69

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
117.70	27°30'	117°33.7'	V-19	0116	0131	495	0-125	129	129
120.25	28°21.5'	114°17.5'	V-17	1508	1515	232	0-44	82	82
120.30	28°12.5'	114°35.5'	V-17	1208	1216	316	0-85	336	336
120.35	28°03'	114°54'	V-17	0858	0905	230	0-74	889	889
120.40	27°53'	115°24'	V-17	0518	0527	341	0-69	358	358
120.45	27°44'	115°30.2'	V-17	0231	0246	466	0-129	347	347
120.50	27°32'	115°42'	V-16	2256	2311	468	0-138	175	175
120.55	27°22.8'	116°05.5'	V-16	1836	1850	513	0-138	172	172
120.60	27°14'	116°27'	V-16	1526	1541	491	0-135	85	85
120.70	26°55'	117°09.5'	V-16	0851	0905	473	0-136	38	38
120.80	26°35'	117°47'	V-16	0216	0231	524	0-128	69	69
120.90	26°13'	118°28'	V-15	1851	1905	493	0-131	57	57
123.37	27°23.3'	114°39'	V-14	0848	0855	288	0-64	188	188
123.40	27°17'	114°48.5'	V-14	1126	1141	542	0-124	292	292
123.45	27°07.2'	115°06.5'	V-14	1406	1421	510	0-121	86	86
123.50	26°56.5'	115°25'	V-14	1731	1746	438	0-133	128	128
123.55	26°47.8'	115°43'	V-14	2016	2030	472	0-134	102	102
123.60	26°36.5'	116°00'	V-14	2346	0001	536	0-122	49	49
127.34	26°54.5'	114°05.7'	V-14	0203	0211	245	0-64	449	449
127.40	26°40.5'	114°27'	V-13	2200	2216	507	0-131	347	347
127.45	26°33.5'	114°45.5'	V-13	1741	1756	518	0-128	89	89
127.50	26°24'	115°07.5'	V-13	1436	1451	564	0-119	46	46
127.55	26°08.5'	115°18.2'	V-13	1106	1120	514	0-138	16	16
127.60	26°02'	115°39'	V-13	0801	0815	478	0-141	21	21
130.30	26°28'	113°30.5'	V-12	0553	0600	275	0-44	22	22
130.35	26°17.5'	113°48.5'	V-12	0856	0910	554	0-134	54	54
130.40	26°08.5'	114°06'	V-12	1216	1231	493	0-130	101	101
130.45	25°58.2'	114°22.5'	V-12	1501	1516	424	0-143	222	222
130.50	25°47'	114°40'	V-12	1846	1901	490	0-129	110	110
130.55	25°38.4'	115°02'	V-12	2126	2141	456	0-142	31	31
130.60	25°29.5'	115°24'	V-13	0111	0126	504	0-132	60	60
133.25	26°02'	112°46.3'	V-10	2038	2046	270	0-62	868	868
133.30	25°57'	113°10'	V-10	1631	1646	529	0-113	178	178
133.35	25°50.6'	113°31.5'	V-10	1149	1204	492	0-138	122	122
133.40	25°39.5'	113°49.2'	V-10	0804	0819	529	0-128	125	125
133.45	25°28.5'	114°08'	V-10	0331	0346	576	0-118	62	62
133.50	25°16.8'	114°26'	V-10	0011	0026	494	0-133	65	65
133.55	25°05.5'	114°43.5'	V-9	1930	1945	622	0-122	64	64
133.60	24°54.5'	115°02'	V-9	1600	1615	500	0-138	40	40
137.23	25°34.2'	112°18.7'	V-8	0158	0204	249	0-41	837	837
137.30	25°18.5'	112°45'	V-8	0751	0806	541	(0-130)	100	100
137.35	25°16'	112°55'	V-8	0941	0956	537	0-132	30	30
137.40	25°03'	113°21.5'	V-8	1331	1346	(466)	0-143	21	21
137.45	24°49.1'	113°41.3'	V-8	1616	1631	520	0-165	23	23
137.50	24°40'	114°02'	V-8	2012	2027	515	0-140	280	280
137.55	24°27.2'	114°19'	V-9	0103	0118	497	0-137	44	44
137.60	24°13'	114°36'	V-9	0501	0516	455	0-144	79	79

Plankton Volumes, Cruise 5306, June 1953

Sta.	Position N.lat.	W.long.	(1953) Date	Time (PST) Start	End	Vol. water strained C.M.	Depth of haul in meters	Vol.per 1000 C.M.strained Total cc.	Sm.org. cc.
50.47			Not occupied						
50.50			Not occupied						
50.60			Not occupied						
50.70			Not occupied						
50.80			Not occupied						
50.90			Not occupied						
50.100			Not occupied						
53.52			Not occupied						
53.55			Not occupied						
53.65			Not occupied						
57.51			Not occupied						
57.55			Not occupied						
57.65			Not occupied						
60.55	37°47.5'	123°15'	VI-15	1051	1104	464	0-124	86	86
60.60	37°37'	123°37'	VI-17	1311	1326	543	0-127	169	169
60.65	37°27.5'	123°59'	VI-17	1526	1541	494	0-146	150	150
60.70			Not occupied						
60.80			Not occupied						
60.90			Not occupied						
60.100			Not occupied						
63.52	37°19'	122°36.5'	VI-14	1228	1236	264	0-63	455	455
63.55	37°12'	122°48'	VI-14	1056	1110	488	0-140	271	271
63.60	37°02.4'	123°09.8'	VI-14	0826	0840	465	0-135	245	245
63.65	36°53'	123°31.5'	VI-14	0621	0635	522	0-141	222	222
67.50	36°48'	122°06'	VI-13	1836	1851	531	0-155	233	233
67.55	36°38.5'	122°27'	VI-13	2111	2126	529	0-137	325	230
67.60	36°28.5'	122°48.5'	VI-13	2311	2325	486	0-145	617	617
67.65	36°19'	123°09'	VI-14	0156	0211	495	0-139	586	586
70.51	36°10.5'	121°48'	VI-13	1301	1316	649	0-143	83	83
70.55	36°03'	122°02'	VI-13	1046	1101	522	0-151	330	330
70.60	35°50'	122°23.5'	VI-13	0721	0736	506	0-138	439	439
70.65	35°39'	122°43.5'	VI-13	0356	0411	472	0-146	415	415
70.70	35°32'	123°05'	VI-13	0131	0146	523	0-135	1518	1518
70.80	35°17'	123°50'	VI-12	2006	2021	495	0-142	182	182
70.90	34°53'	124°30'	VI-12	1521	1536	503	0-143	239	239
70.100	34°31.5'	125°11'	VI-12	1036	1051	527	0-139	467	467
73.50	35°36'	121°16'	VI-9	2017	2028	434	0-75	651	651
73.55	35°26.5'	121°37.5'	VI-9	2236	2251	520	0-131	269	269
73.60	35°18'	121°58.5'	VI-10	0201	0216	550	0-109	546	546
77.50	35°04.5'	120°52'	VI-10	1457	1508	421	0-87	551	551
77.55	34°55'	121°12'	VI-10	1226	1241	458	0-138	515	515
77.60	34°41.5'	121°33.5'	VI-10	0926	0941	450	0-138	578	578
77.65	34°30'	121°54.5'	VI-10	0701	0716	379	0-129	470	470
80.51	34°26.5'	120°32.5'	VI-10	1912	1922	324	0-86	741	278
80.55	34°19.5'	120°48'	VI-10	2201	2216	442	0-127	1267	1267

Position			Time (PST)				Vol. per 1000 C.M. strained	
		(1953)			Vol. water strained	Depth of haul	Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
80.60	34°09'	121°09'	VI-11	0111	0126	483	0-128	1010	596
80.65	33°59'	121°30'	VI-11	0326	0341	390	0-132	323	323
80.70	33°49.5'	121°50'	VI-11	0611	0626	497	0-132	378	258
80.80	33°29'	122°30'	VI-11	1116	1131	486	0-141	381	381
80.90	33°09'	123°13'	VI-11	1556	1611	484	0-139	1260	1260
80.100	32°49'	123°54'	VI-11	2126	2141	489	0-130	115	115
83.40	34°14'	119°22'	VI-12	2200	2201	61	0-14	16	16
83.43	34°08'	119°34'	VI-12	2006	2021	442	0-144	538	538
83.48	33°58'	119°55'	VI-12	1326	1340	413	0-148	484	484
83.51	33°53'	120°08'	VI-12	1052	1103	347	0-109	773	773
83.51E	33°52.2'	120°05.6'	VII-2	1248	1256	252	0-72	421	421
83.55	33°44'	120°24'	VI-12	0755	0810	402	0-140	2635	2635
83.60	33°34'	120°45'	VI-12	0406	0421	389	0-142	575	575
83.65	33°25'	121°05'	VI-12	0001	0016	383	0-146	721	721
83.70	33°14.1'	121°26'	VI-11	2116	2130	435	0-139	490	490
83.80	32°53.5'	122°07'	VI-11	1521	1536	448	0-136	529	529
83.90	32°34'	122°48'	VI-11	0911	0926	454	0-139	84	84
85.39	34°00'	119°04'	VI-11	2326	2340	452	0-140	786	786
85.39E	34°00'	119°04'	VII-1	2226	2240	515	0-112	8763	8763
85.40	33°57'	119°10.5'	VI-11	0136	0151	470	0-135	564	564
85.45	33°47'	119°31'	VI-10	0646	0700	501	0-124	688	688
85.45E	33°47'	119°31.2'	VII-2	0421	0436	532	0-123	620	620
85.50	33°37'	119°52'	VI-10	1023	1030	242	0-73	719	719
85.50E	33°31.2'	119°56.5'	VII-2	0916	0930	434	0-138	1152	1152
85.55	33°27'	120°12'	VI-10	1356	1410	458	0-138	498	498
85.60	33°16.5'	120°33'	VI-10	1811	1825	458	0-115	419	419
87.35	33°50'	118°37.5'	VI-9	1911	1925	480	0-143	600	600
87.35E	33°50'	118°37.5'	VII-1	1816	1831	498	0-136	5226	5226
87.40	33°40'	118°58.5'	VI-9	1535	1550	457	0-132	604	604
87.40E	33°40'	118°58.5'	VII-1	1501	1516	512	0-135	805	805
87.45	33°30'	119°19'	VI-9	1235	1250	490	0-139	732	732
87.45E	33°30'	119°19'	VII-1	1156	1211	492	0-139	1179	1179
87.50	33°20'	119°39.5'	VI-9	0823	0830	262	0-69	5349	5349
87.55	33°10'	120°00.5'	VI-9	0511	0525	482	0-141	427	427
87.60	33°00.4'	120°21.1'	VI-9	0056	0111	433	0-150	453	453
87.65	32°52.5'	120°36'	VI-8	2056	2110	340	0-160	335	335
87.70	32°39.8'	121°01.6'	VI-8	1746	1800	432	0-144	516	516
87.80	Occupied. Sample not quantitative								
87.90	31°59.8'	122°24.6'	VI-8	0456	0510	480	0-134	183	183
90.28	33°28.5'	117°46.7'	VI-5	1856	1910	494	0-115	982	982
90.30	33°24.5'	117°55'	VI-5	2120	2135	506	0-127	582	582
90.37	33°11'	118°23.5'	VI-6	0156	0211	491	0-136	773	773
90.45	32°54.6'	118°57'	VI-6	0756	0811	462	0-145	1969	1969
90.50	32°44.6'	119°16.7'	VI-6	1151	1205	426	0-142	666	666
90.55	32°35'	119°37'	VI-6	1526	1540	433	0-137	518	518

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
90.60	32°25'	119°57'	VI-6	1956	2010	444	0-145	610	610
90.65	32°13'	120°22.5'	VI-6	2216	2231	429	0-147	950	950
90.70			Occupied. Sample not quantitative						
90.80	31°45'	121°19'	VI-7	0846	0900	475	0-136	183	183
90.90	31°25'	121°59'	VI-7	1501	1515	424	0-148	118	118
90.100	31°04'	122°40'	VI-7	2056	2110	438	0-144	11	11
93.27	32°55.7'	117°20.7'	VI-10	2238	2253	494	0-137	284	284
93.30	32°49.2'	117°32.6'	VI-11	0051	0106	479	0-127	980	980
93.35	32°36.5'	117°56.5'	VI-11	0416	0431	434	0-143	253	253
93.40	32°28'	118°12.5'	VI-11	0833	0848	432	0-142	764	185
93.45	32°18.5'	118°32'	VI-11	1116	1131	469	0-135	1002	1002
93.50	32°07'	118°47.5'	VI-11	1506	1521	531	0-129	1479	1479
93.55	31°57'	119°03'	VI-11	1751	1806	467	0-140	1114	1114
93.60	31°46'	119°18'	VI-11	2301	2316	451	0-137	865	865
93.65	31°36.5'	119°32'	VI-12	0036	0051	540	0-124	851	851
93.70	31°26'	119°47'	VI-12	0456	0511	497	0-131	684	684
93.80	30°48'	120°41.5'	VI-12	1256	1311	616	0-126	45	45
93.90	30°47.5'	121°33.5'	VI-12	2026	2041	442	0-143	149	149
97.30	32°14.3'	117°08'	VI-15	0008	0015	232	0-55	629	198
97.35	32°08.5'	117°20'	VI-14	2151	2205	421	0-145	85	85
97.40	31°57'	117°46'	VI-14	1637	1651	435	0-140	221	83
97.45	31°45'	118°10'	VI-14	1216	1231	431	0-135	511	511
97.50	31°35.5'	118°31'	VI-14	0906	0920	412	0-140	1191	1191
97.55			Occupied. No biological data taken						
97.60	31°16'	119°11.5'	VI-14	0126	0141	495	0-139	848	848
97.65	31°07'	119°32'	VI-13	2141	2156	504	0-143	258	258
97.70	30°56.5'	119°52.5'	VI-13	1816	1830	473	0-142	93	93
97.80	30°36.8'	120°33.4'	VI-13	1101	1116	462	0-150	87	87
97.90	30°18.5'	121°11'	VI-13	0156	0210	475	0-125	80	80
100.29	31°42.2'	116°43.5'	VI-15	0620	0628	235	0-76	144	144
100.30	31°40.5'	116°46.6'	VI-15	0806	0820	466	0-146	133	133
100.35	31°29'	117°05'	VI-15	1056	1111	601	0-123	815	815
100.40	31°17'	117°24.7'	VI-15	1446	1501	478	0-135	460	460
100.45	31°06'	117°43'	VI-15	1741	1755	472	0-143	1314	1314
100.50	30°54.3'	118°02.5'	VI-15	2136	2151	460	0-141	1087	1087
100.55	30°44'	118°19'	VI-16	0036	0051	533	0-122	431	431
100.60	30°32'	118°37.5'	VI-16	0441	0456	421	0-149	1069	1069
100.65	30°21'	118°57'	VI-16	0746	0800	437	0-145	663	663
100.70	30°10'	119°15'	VI-16	1136	1151	543	0-127	846	846
100.80	29°58.5'	120°05.5'	VI-16	1836	1853	477	0-149	138	138
100.90	29°39'	120°46.5'	VI-17	0056	0111	411	0-146	122	122
100.100	29°20'	121°24.5'	VI-17	0716	0731	496	0-133	56	56
103.30	31°04.5'	116°25'	VI-19	0633	0640	162	0-54	494	494
103.35	30°52.8'	116°39.5'	VI-19	0346	0401	450	0-135	489	489
103.40	30°44.2'	117°02.5'	VI-19	0026	0041	477	0-145	839	839

Plankton Volumes, Cruise 5306, June 1953 (cont'd)

Position			Time (PST)			Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.45	30°38'	117°22'	VI-18	2026	2040	447	0-141	472	472
103.50	30°30.1'	117°41.5'	VI-18	1806	1820	442	0-135	340	340
103.55	30°24'	117°56'	VI-18	1536	1551	549	0-115	374	374
103.60	30°19.5'	118°12'	VI-18	1216	1231	508	0-131	531	531
103.65	30°07'	118°34'	VI-18	0826	0840	449	0-139	1024	1024
103.70	29°54.2'	118°55.5'	VI-18	0526	0541	473	0-144	656	656
103.80	29°30'	119°38.8'	VI-17	2223	2238	486	0-136	156	95
103.90	29°05'	120°21'	VI-7	1446	1511	514	0-125	58	58
107.32	30°25.8'	116°10.5'	VI-16	1236	1250	494	0-122	2472	762
107.35	30°19.8'	116°22.2'	VI-16	1056	1110	471	0-134	276	276
107.40	30°09.8'	116°42.2'	VI-16	0806	0820	486	0-114	2675	2675
107.45	30°00'	117°02'	VI-16	0501	0515	501	0-119	1078	1078
107.50	29°50'	117°22'	VI-16	0251	0306	524	0-133	648	648
107.55	29°40'	117°43'	VI-15	2241	2255	494	0-137	647	142
107.60	29°31'	118°02'	VI-15	2031	2046	553	0-123	170	170
107.65	29°21'	118°24'	VI-15	1726	1740	522	0-123	146	146
107.70	29°09'	118°45'	VI-15	1326	1340	(471)	0-140	85	85
107.80			Not occupied						
110.33	29.50'	115°52.5'	VI-14	0528	0536	(284)	0-69	5694	4991
110.35	29°47.8'	116°00'	VI-14	0706	0720	479	0-133	542	542
110.40	29°37.5'	116°15'	VI-14	1106	1120	466	0-144	343	343
110.45	29°28'	116°40'	VI-14	1541	1556	486	0-141	74	74
110.50	29°19'	117°10'	VI-14	1946	2001	498	0-140	397	132
110.55	29°12'	117°25'	VI-14	2116	2130	497	0-143	189	189
110.60	29°01'	117°46'	VI-15	0031	0046	536	0-134	291	112
110.65	28°47'	118°03'	VI-15	0246	0300	492	0-140	130	130
110.70	28°38'	118°20'	VI-15	0601	0615	513	0-136	41	41
110.80			Not occupied						
110.90			Not occupied						
113.30	29°20.5'	115°14.5'	VI-13	2213	2220	(226)	0-79	452	452
113.35	29°11'	115°34.5'	VI-13	1926	1940	489	0-126	1205	1205
113.40	28°57'	116°03'	VI-13	1611	1625	494	0-130	122	122
113.45	28°49'	116°20'	VI-13	1306	1320	497	0-130	64	64
113.50	28°39'	116°40'	VI-13	1001	1015	477	0-141	92	92
113.55	28°31'	116°57'	VI-13	0816	0830	472	0-132	233	233
113.60	28°10.5'	117°15'	VI-13	0526	0540	489	0-116	180	180
113.65	28°04'	117°35'	VI-13	0216	0230	468	0-133	60	60
113.70	27°58'	117°55'	VI-13	0006	0020	483	0-130	62	62
117.26	28°54.5'	114°38.5'	VI-11	2043	2051	(252)	0-66	634	634
117.30	28°48'	114°56.5'	VI-11	2243	2251	242	0-59	455	455
117.35	28°39'	115°17'	VI-12	0111	0126	468	0-127	192	192
117.40	28°31.5'	115°37'	VI-12	0416	0430	478	0-126	293	293
117.45	28°18'	115°55'	VI-12	0621	0635	549	0-116	153	153
117.50	28°07'	116°17.5'	VI-12	0941	0956	470	0-131	200	200
117.55	27°57'	116°38'	VI-12	1136	1150	440	0-142	213	213

Plankton Volumes, Cruise 5306, June 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
117.60	27°48'	116°56.5'	VI-12	1421	1436	468	0-135	111	111
117.65	27°40'	117°15'	VI-12	1621	1635	537	0-107	112	112
117.70	27°30'	117°33'	VI-12	1926	1940	467	0-132	64	64
120.25	28°25'	114°16.2'	VI-11	1624	1629	187	0-43	107	107
120.30	28°13'	114°34.5'	VI-11	1342	1353	312	0-85	660	660
120.35	28°03'	114°54'	VI-11	1108	1115	(235)	0-58	213	213
120.40	27°55'	115°14.5'	VI-10	1354	1358	164	0-29	611	611
120.45	27°41.5'	115°33.5'	VI-10	1126	1140	449	0-142	334	223
120.50	27°35'	115°51'	VI-10	0721	0735	526	0-128	175	175
120.55	27°24'	116°12'	VI-10	0401	0416	522	0-124	105	105
120.60	27°14.5'	116°31'	VI-10	0116	0131	509	0-128	63	63
120.65	27°03'	116°52'	VI-9	2216	2230	507	0-129	39	39
120.70	26°51'	117°17'	VI-9	1916	1931	637	0-101	69	69
120.80	26°33.5'	117°49.2'	VI-9	1311	1326	521	0-135	19	19
120.90	26°13.5'	118°33'	VI-9	0646	0700	598	0-110	47	47
123.37	27°24.5'	114°40'	VI-8	0523	0530	206	0-49	349	349
123.40	27°18'	114°52.2'	VI-8	0736	0751	(493)	0-130	288	288
123.45	27°07.5'	115°11.8'	VI-8	0946	1000	432	0-129	347	231
123.50	26°59.5'	115°33.2'	VI-8	1306	1320	482	0-144	158	158
123.55	26°49'	115°49'	VI-8	1501	1516	486	0-140	66	66
123.60	26°36'	116°08.8'	VI-8	1801	1815	544	0-122	37	37
127.34	26°58.8'	114°07.8'	VI-8	0108	0115	220	0-66	600	600
127.40	26°41.8'	114°27.5'	VI-7	2151	2206	457	0-108	201	201
127.45	26°28.8'	114°52'	VI-7	1826	1841	429	0-110	275	275
127.50	26°23.5'	115°05'	VI-7	1626	1640	468	0-107	380	380
127.55	26°11.5'	115°26'	VI-7	1311	1326	469	0-137	43	43
127.60	26°01'	115°46'	VI-7	1031	1046	486	0-128	25	25
130.30	26°31.8'	113°33'	VI-6	1203	1210	288	0-43	854	854
130.35	26°19.5'	113°47.8'	VI-6	1501	1516	504	0-124	163	163
130.40	26°06.8'	114°08'	VI-6	1841	1856	497	0-108	364	364
130.45	25°55.5'	114°24'	VI-6	2046	2101	471	0-133	382	149
130.50	25°48'	114°45'	VI-7	0011	0026	481	0-137	208	208
130.55	25°43'	115°13'	VI-7	0231	0246	495	0-122	238	238
130.60	25°31.5'	115°33'	VI-7	0611	0626	543	0-122	22	22
133.25	26°04.9'	112°46.3'	VI-6	0728	0736	300	0-57	593	593
133.30	25°53.2'	113°10'	VI-6	0441	0456	477	0-131	440	440
133.35	25°47.2'	113°21.5'	VI-6	0231	0246	444	0-135	374	374
133.40	25°34.5'	113°45.5'	VI-5	2346	0001	402	0-148	229	229
133.45	25°20.8'	114°03.5'	VI-5	1951	2006	398	0-153	90	90
133.50	25°15.5'	114°26.6'	VI-5	1721	1736	450	0-145	84	84
137.23	25°33.3'	112°15.5'	VI-4	1924	1928	137	0-37	687	687
137.30	25°19.3'	112°45'	VI-4	2326	2341	486	0-151	136	136
137.35	25°10.9'	113°02.8'	VI-5	0126	0141	555	0-137	176	176
137.40	25°00.6'	113°20.8'	VI-5	0541	0555	466	0-129	56	56
137.45	24°49.8'	113°41.8'	VI-5	0756	0811	507	0-114	32	32
137.50	24°37'	114°07'	VI-5	1106	1121	508	0-121	43	43

Plankton Volumes, Cruise 5307, July 1953

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
60.55	37°49'	123°16.5'	VII-11	0827	0836	272	0-80	353	353
60.60	37°37'	123°37'	VII-11	0541	0556	351	0-155	242	242
60.70	37°15'	124°21'	VII-10	2316	2330	463	0-126	849	849
60.80	36°57'	125°01'	VII-10	1826	1841	438	0-136	539	539
60.90	36°32'	125°51'	VII-10	1301	1316	458	0-136	190	190
60.100	36°14'	126°30.5'	VII-10	0846	0900	578	0-135	159	159
63.52	37°19'	122°36'	VII-12	1818	1826	213	0-75	235	235
63.55	37°14'	122°49'	VII-12	1541	1556	431	0-135	542	542
67.53	36°45'	122°14'	VII-12	2305	2320	428	0-148	535	535
67.55	36°39'	122°26'	VII-13	0151	0205	371	0-151	302	302
67.60	36°30'	122°46.5'	VII-13	0415	0431	458	0-147	347	347
67.65	36°19'	123°09'	VII-13	0726	0741	457	0-135	646	646
70.51	36°10'	121°46'	VII-9	0136	0151	465	0-148	179	179
70.55	36°03'	122°02'	VII-9	0521	0536	532	0-137	299	299
70.60	35°55.5'	122°17.5'	VII-9	0806	0821	472	0-131	636	636
70.70	35°34.5'	123°07'	VII-9	1336	1351	465	0-138	525	525
70.80	35°13'	123°48'	VII-9	1856	1911	408	0-143	1654	1654
73.50	35°37'	121°17.5'	VII-13	2030	2038	320	0-73	375	375
73.55	35°29'	121°40.5'	VII-13	1726	1740	469	0-125	284	284
73.60	35°21'	121°54.5'	VII-13	1546	1601	425	0-138	369	369
77.50	35°05'	120°54'	VII-14	0036	0051	398	0-137	1039	1039
77.55	34°56'	121°14'	VII-14	0346	0401	414	0-136	1522	1522
77.60	34°46'	121°35'	VII-14	0606	0620	348	(0-170)	714	714
77.65	34°33'	121°55'	VII-14	0907	0922	410	0-129	361	361
80.51	34°26.5'	120°32.5'	VII-16	0853	0900	238	0-66	1313	1313
80.55	34°19'	120°48'	VII-16	0634	0649	477	0-121	742	742
80.60	34°07.5'	121°11'	VII-16	0306	0316	242	0-142	4715	4715
80.70	33°47'	121°50'	VII-15	2011	2025	452	0-126	529	529
80.80	33°29'	122°32'	VII-15	1445	1459	451	0-133	275	275
80.90	33°09'	123°15.5'	VII-15	0856	0910	488	0-129	61	61
80.100	32°49'	123°54'	VII-15	0321	0336	399	0-148	48	48
83.40	34°14'	119°22'	VII-16	1510	1512	78	(0-14)	18	18
83.43	34°08'	119°34'	VII-16	1646	1701	422	0-143	3708	3708
83.48	33°58.5'	119°55'	VII-16	2012	2023	394	0-81	203	203
83.51	33°52'	120°08'	VII-16	2209	2220	390	0-83	2721	2721
83.55	33°43'	120°25'	VII-17	0056	0110	448	0-134	925	925
83.60	33°34'	120°45'	VII-17	0401	0416	409	0-139	579	579
85.39	34°00'	119°04'	VII-17	2116	2131	437	0-136	1419	1419
85.40	33°57'	119°10.5'	VII-17	2001	2015	465	0-123	282	282
85.45	33°47'	119°32'	VII-17	1857	1912	437	0-133	1337	1337
85.50	33°37'	119°52'	VII-17	1351	1406	427	0-140	2808	2808

Plankton Volumes, Cruise 5307, July 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
85.55	33°27'	120°12.5'	VII-17	1036	1050	406	0-128	2701	2503
85.60	33°14.5'	120°34'	VII-17	0716	0731	321	0-139	1413	1413
87.35			Occupied.	Sample not		quantitative			
87.40	33°40'	118°58.5'	VII-18	0416	0431	404	0-139	463	463
87.45	33°30'	119°19'	VII-18	0719	0734	458	0-115	4100	4100
87.50	33°20'	119°38.5'	VII-18	0941	0948	238	0-52	1210	1210
87.55	33°10'	120°00.5'	VII-18	1246	1300	469	0-138	469	469
87.60	33°00'	120°21.5'	VII-18	1601	1616	441	0-135	2968	2968
90.28	33°28.5'	117°46.5'	VII-20	0146	0201	466	0-124	378	378
90.30	33°24.5'	117°55'	VII-19	2316	2330	448	0-132	272	272
90.37	33°11'	118°23.5'	VII-19	1821	1836	476	0-131	688	688
90.45	32°54.5'	118°56'	VII-19	1413	1427	437	0-122	508	508
90.50	32°44.5'	119°17'	VII-19	1036	1050	412	0-135	344	344
90.55	32°34.5'	119°32'	VII-19	0811	0826	328	0-143	787	787
90.60	32°24'	119°55'	VII-19	0516	0531	408	0-140	1023	1023
90.70	32°04.5'	120°39'	VII-18	2316	2325	309	0-135	2489	2489
93.27	32°56.2'	117°18.2'	VII-26	0418	0424	204	0-43	712	712
93.30	32°49.2'	117°32.5'	VII-26	0215	0230	455	0-136	255	255
93.35	32°41'	117°52.5'	VII-25	2246	2300	492	0-124	215	215
93.40	32°29.5'	118°13.2'	VII-25	2016	2030	481	0-119	177	177
93.45	32°19'	118°31.5'	VII-25	1726	1740	429	0-132	1806	1806
93.50	32°09'	118°53'	VII-25	1451	1506	421	0-155	672	672
97.30	32°15'	117°09'	VII-24	2239	2244	(184)	0-27	358	358
97.35	32°07'	117°26.5'	VII-25	0121	0136	447	0-135	447	447
97.40	31°57.5'	117°48'	VII-25	0421	0436	451	0-127	384	384
97.45	31°49.6'	118°06.2'	VII-25	0650	0704	437	0-146	137	137
97.50	31°44'	118°32.2'	VII-25	1031	1045	454	0-142	542	542
100.29	31°42'	116°43.8'	VII-24	1727	1738	388	0-101	227	227
100.30	31°40'	116°47.8'	VII-24	1606	1621	480	0-140	171	171
100.35	31°33.2'	117°14'	VII-24	1320	1334	487	0-133	(6118)	(6118)
100.40	31°24.5'	117°28.5'	VII-24	1036	1050	458	0-138	1037	1037
100.45	31°13.9'	117°49.5'	VII-24	0641	0656	384	0-127	151	151
100.50	31°03.8'	118°09.5'	VII-24	0416	0430	419	0-149	872	872
100.60	30°41.2'	118°48'	VII-23	2226	2240	476	0-147	389	389
100.70	30°18'	119°26.8'	VII-23	1626	1641	440	0-142	1908	1908
100.80	30°10'	120°14'	VII-23	1051	1105	503	0-122	56	56
103.30	31°05.2'	116°25.2'	VII-22	0902	0908	234	0-50	727	727
103.35	30°53.2'	116°45.5'	VII-22	1201	1215	440	0-136	14995	14995
103.40	30°44'	117°04'	VII-22	1506	1520	462	0-136	409	409
107.32	30°26.8'	116°12.8'	VII-22	0426	0441	475	0-107	958	537
107.35	30°21.2'	116°27'	VII-22	0106	0121	482	0-138	108	108

Plankton Volumes, Cruise 5307, July 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
107.40	30°08.8'	116°40'	VII-21	2151	2205	501	0-130	220	220
110.33	29°48.8'	115°53.8'	VII-19	0346	0401	538	0-125	799	279
110.35	29°45.8'	116°00'	VII-19	0606	0621	394	0-140	625	625
110.40	29°35.2'	116°22'	VII-19	0931	0945	464	0-122	276	276
110.50	29°18'	116°59'	VII-19	1421	1435	459	0-135	120	120
110.60	28°48.5'	117°40.5'	VII-21	0946	1000	515	0-137	70	70
113.30	29°24'	115°21.5'	VII-18	2234	2238	155	0-64	1218	573
113.35	29°10'	115°37.5'	VII-18	1946	1956	647	0-144	525	525
113.40	29°04'	115°59.5'	VII-18	1606	1621	565	0-114	60	60
117.26	28°53.8'	114°36.5'	VII-17	2330	2338	344	0-54	308	308
117.30	28°45.8'	114°51.5'	VII-18	0406	0418	(458)	0-85	334	334
117.35	28°36.2'	115°10.8'	VII-18	0641	0655	424	0-146	234	234
117.40	28°27.8'	115°36.2'	VII-18	1031	1045	529	0-129	38	38
120.25	28°20.2'	114°14.5'	VII-17	1814	1818	117	0-37	85	85
120.30	28°14.8'	114°34.5'	VII-17	1527	1538	323	0-104	601	260
120.35	28°05.5'	114°53.2'	VII-17	0412	0422	358	0-68	598	598
120.45	27°43.5'	115°31.5'	VII-16	2106	2120	495	0-126	150	150
120.50	27°35.5'	115°52.2'	VII-16	1636	1650	523	0-127	88	88
120.60	27°14'	116°30'	VII-16	1051	1106	503	0-127	20	20
120.70	26°50'	117°06.8'	VII-16	0525	0540	481	0-141	50	50
120.80	26°33'	117°47.2'	VII-16	0011	0026	509	0-132	55	55
120.90	26°17.2'	118°27'	VII-15	1846	1900	508	0-142	47	47
123.37	27°24'	114°39.2'	VII-14	1523	1531	292	0-55	109	109
123.40	27°18.2'	114°51.5'	VII-14	1746	1800	524	0-105	175	175
123.45	27°09.5'	115°11.5'	VII-14	2031	2046	414	0-150	203	203
123.50	26°59'	115°31.2'	VII-15	0011	0026	461	0-138	174	174
127.34	26°55.2'	114°06.8'	VII-14	0923	0931	224	0-74	277	277
127.40	26°44.5'	114°26'	VII-14	0606	0620	513	0-125	133	133
127.45	26°32.5'	114°51'	VII-14	0226	0241	492	0-126	187	187
127.50	26°21.2'	115°10.5'	VII-14	0006	0021	586	0-112	143	143
130.30			Occupied. Sample spoiled						
130.35	26°14.8'	113°48.2'	VII-12	2341	2355	496	0-141	193	193
130.40	26°09.8'	114°08.2'	VII-13	0306	0321	524	0-121	172	172
130.45	26°00'	114°24'	VII-13	0621	0636	559	0-118	43	43
130.50	25°46'	114°47'	VII-13	1056	1110	551	0-113	80	80
130.60	25°28.2'	115°26'	VII-13	1646	1700	468	0-138	53	53
133.25	26°05.2'	112°50'	VII-12	1543	1551	352	0-68	1391	1391
133.30	25°56.8'	113°07.5'	VII-12	1331	1346	553	0-104	76	76
133.35	25°45.8'	113°26.5'	VII-12	1016	1030	494	0-137	40	40
133.40	25°31.2'	113°47'	VII-12	0716	0730	536	0-123	26	26
137.23	25°36'	112°17.8'	VII-11	1914	1919	211	0-49	522	522
137.30	25°20.2'	112°45'	VII-11	2336	2351	445	0-118	126	126

Plankton Volumes, Cruise 5308, August 1953

Position			Time (PST)			Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc	cc.
60.55	37°47.2'	123°14.2'	VIII-22	1453	1500	199	0-81	271	271
60.60	37°34'	123°41.5'	VIII-22	1150	1204	400	0-130	445	445
60.70	37°20'	124°23.5'	VIII-22	0700	0715	458	0-134	350	350
60.80	36°57'	125°05.5'	VIII-22	0136	0151	453	0-125	512	512
60.90	36°36.5'	125°46'	VIII-21	1951	2005	383	0-142	1150	1150
60.100	36°17.5'	126°24.5'	VIII-21	1456	1510	377	0-137	345	345
63.52	37°19.1'	122°36.2'	VIII-23	1748	1757	213	0-90	197	197
63.55			Occupied. Sample lost						
67.50	36°50.8'	122°03'	VIII-24	1032	1042	341	0-75	387	387
67.55	36°36.6'	122°24.5'	VIII-24	0746	0800	454	0-131	2201	2201
67.65	36°18.7'	123°06.7'	VIII-24	0226	0240	482	0-136	850	850
70.51			Occupied. No biological data taken						
70.55	36°03'	122°03.5'	VIII-20	0836	0849	530	0-121	1414	1414
70.60	35°51.9'	122°24'	VIII-20	1236	1250	446	0-125	503	503
70.70	35°32'	123°04.5'	VIII-20	1726	1741	441	0-121	431	431
70.80	35°12'	123°47.8'	VIII-20	2336	2351	446	0-123	377	377
73.50	35°36.8'	121°15.5'	VIII-24	1907	1917	356	0-76	450	450
73.60	35°15'	121°59'	VIII-25	0016	0030	557	0-114	1615	1615
77.50	35°05'	120°54.5'	VIII-25	1436	1451	409	0-155	1182	1182
77.55	34°54.5'	121°11'	VIII-25	1126	1140	434	0-138	1887	1887
77.65	34°29.8'	121°55.5'	VIII-25	0556	0611	430	0-132	582	582
80.51	34°26'	120°31.6'	VIII-25	2002	2012	393	0-67	1004	1004
80.55	34°20'	120°49.5'	VIII-25	2311	2325	430	0-136	860	860
80.60	34°10.8'	121°08'	VIII-26	0301	0315	404	0-150	1487	1487
80.70	33°58.5'	121°48.5'	VIII-26	0811	0825	469	0-137	239	239
80.80	33°36'	122°30'	VIII-26	1321	1335	450	0-144	919	919
80.90	33°10'	123°16.5'	VIII-26	1906	1921	543	0-128	368	368
80.100	32°45'	124°00'	VIII-27	0041	0056	528	0-124	91	91
83.40	34°14.2'	119°21.2'	VIII-28	0730	0731	127	0-6	236	236
83.43	34°08.8'	119°34'	VIII-28	0556	0611	548	0-122	603	603
83.48	33°58.5'	119°55.5'	VIII-28	0008	0016	268	0-64	216	216
83.51	33°51.6'	120°08.5'	VIII-27	2133	2140	262	0-72	252	252
83.55	33°46'	120°25.1'	VIII-27	1936	1951	465	0-148	241	241
83,60	33°35'	120°48'	VIII-27	1621	1635	444	0-163	608	608
85.39	34°00.8'	119°05'	VIII-28	1106	1120	529	0-125	170	170
85.40	33°57.2'	119°09.8'	VIII-29	2056	2110	491	0-125	1334	1334
85.45	33°47.8'	119°30.3'	VIII-29	1801	1816	512	0-132	371	371
85.50	33°36.5'	119°51.8'	VIII-29	1436	1450	551	0-122	236	236
85.55	33°31'	120°14.5'	VIII-29	1146	1200	580	0-107	648	648
85.60	33°19'	120°35'	VIII-29	0831	0846	489	0-126	392	392

Plankton Volumes, Cruise 5308, August 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
87.35	33°50.8'	118°37.2'	VIII-28	1341	1355	555	0-121	306	306
87.40	33°40'	118°56.5'	VIII-28	1656	1711	440	0-164	372	372
87.45	33°30'	119°19'	VIII-28	2036	2050	531	0-147	414	414
87.50	33°18.5'	119°38.2'	VIII-28	2324	2328	121	0-24	743	743
87.55	33°09.6'	120°01.2'	VIII-29	0211	0226	645	0-97	459	459
87.60	32°58.5'	120°24'	VIII-29	0526	0540	576	0-105	392	392
90.28			Occupied. No biological data taken						
90.30	33°24.5'	117°55'	VIII-19	1806	1821	495	0-126	1011	1011
90.37	33°10.5'	118°23.5'	VIII-19	1356	1410	477	0-135	476	476
90.45	32°56'	118°57.5'	VIII-19	0951	1006	438	0-133	315	315
90.50	32°45'	119°15.5'	VIII-19	0637	0648	352	0-87	458	458
90.55	32°35'	119°37'	VIII-19	0346	0401	449	0-143	1043	1043
90.58	32°30'	119°47'	VIII-19	0116	0131	349	0-155	2578	2578
90.60	32°25'	119°57.5'	VIII-18	2348	0002	458	0-132	1053	1053
90.70	32°04'	120°36'	VIII-18	1811	1826	454	0-131	4317	3881
93.27	32°56'	117°19.5'	VIII-19	2346	0000	507	0-131	715	715
93.30	32°50'	117°31.5'	VIII-20	0215	0230	442	0-147	634	634
93.35	32°40'	117°52'	VIII-20	0419	0435	492	0-135	1687	1687
93.40	32°29.5'	118°12.5'	VIII-20	0711	0726	497	0-136	143	143
93.50	32°11'	118°53'	VIII-20	1211	1226	470	0-135	930	930
97.30	32°16'	117°10.5'	VIII-21	0437	0442	192	0-47	626	626
97.35	32°08'	117°26'	VIII-21	0231	0245	509	0-120	610	610
97.38	32°00.5'	117°39'	VIII-21	0023	0037	491	0-125	1262	1262
97.40	31°56'	117°50'	VIII-20	2300	2315	527	0-120	499	499
97.50	31°35.5'	118°30.5'	VIII-20	1636	1651	436	0-142	576	576
100.29	31°42'	116°44'	VIII-16	1816	1831	457	0-126	57	57
100.30	31°40'	116°48'	VIII-16	1916	1931	426	0-143	307	307
100.35	31°31'	117°06.5'	VIII-16	2136	2151	469	0-126	2133	2133
100.40	31°20'	117°26.5'	VIII-17	0100	0114	386	0-139	797	797
100.50	31°00'	118°06'	VIII-17	0540	0555	435	0-136	345	345
100.55	30°50.5'	118°27'	VIII-17	0814	0829	422	0-140	344	344
100.60	30°38'	118°50'	VIII-17	1205	1221	390	0-139	359	359
100.70	30°21'	119°27.5'	VIII-17	1646	1701	423	0-139	416	416
100.80	30°01'	120°07'	VIII-17	2226	2240	389	0-145	90	90
103.30	31°06'	116°26.5'	VIII-16	0418	0426	247	0-53	583	583
103.35	30°56'	116°45.5'	VIII-16	0106	0120	413	0-138	1279	1279
103.40	30°45.5'	117°05.5'	VIII-15	2138	2152	463	0-131	136	136
107.32	30°26'	116°11'	VIII-15	0946	1000	499	0-111	581	581
107.35	30°19.5'	116°23'	VIII-15	1150	1204	406	0-138	1305	1305
107.40	30°11.5'	116°41.5'	VIII-15	1530	1544	436	0-123	2468	2468

Plankton Volumes, Cruise 5308, August 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
110.33	29°51.5'	115°56'	VIII-15	0423	0434	356	0-92	758	581
110.35	29°46'	116°04.5'	VIII-15	0231	0246	490	0-124	645	645
110.40	29°36.5'	116°20'	VIII-14	2310	2324	416	0-141	312	312
110.50	29°16'	116°59'	VIII-14	1741	1756	444	0-138	1066	1066
110.60	28°51.5'	117°39.5'	VIII-14	1206	1220	403	0-141	129	129
113.30	29°22.5'	115°17.5'	VIII-5	1638	1645	183	0-60	251	251
113.35	29°10.5'	115°38'	VIII-5	2046	2101	478	0-135	134	134
113.40	29°01'	115°57'	VIII-6	0106	0121	380	0-141	810	810
117.26	28°56'	114°41'	VIII-6	1408	1415	244	0-70	303	303
117.30	28°48'	114°56.5'	VIII-6	1207	1217	292	0-94	260	260
117.35	28°39'	115°17'	VIII-6	0926	0941	578	0-124	39	39
117.40	28°25.5'	115°34'	VIII-6	0616	0631	506	0-125	170	170
120.25	28°23'	114°14.5'	VIII-6	1824	1829	178	0-46	101	101
120.30	28°12.5'	114°33.5'	VIII-6	2057	2106	289	0-86	246	246
120.35	28°03'	114°54'	VIII-6	2323	2331	253	0-79	268	268
120.45	27°43'	115°33'	VIII-12	1715	1730	388	0-147	186	186
120.50	27°32.5'	115°52.5'	VIII-12	2028	2043	406	0-143	436	436
120.60	27°11.5'	116°31'	VIII-13	0146	0200	421	0-138	423	423
120.70	26°47'	117°16.5'	VIII-13	0745	0800	474	0-127	70	70
120.80	26°31'	117°45'	VIII-13	1238	1252	445	0-121	18	18
120.90	26°14.5'	118°25'	VIII-13	1738	1753	474	0-131	34	34
123.37	27°24'	114°40'	VIII-12	0057	0103	245	0-54	563	563
123.40	27°15.5'	114°50.5'	VIII-11	2315	2330	450	0-119	111	111
123.45	27°08'	115°11'	VIII-11	1920	1936	386	0-147	306	306
123.50	26°58'	115°30.5'	VIII-11	1706	1720	446	0-139	170	170
127.34	26°54'	114°08'	VIII-11	0145	0154	275	0-78	1013	1013
127.40	26°42'	114°28.5'	VIII-11	0456	0511	475	0-137	358	358
127.45	26°29.5'	114°49'	VIII-11	0708	0723	381	0-140	338	338
127.50	26°18.5'	115°07'	VIII-11	1014	1028	438	0-137	135	135
130.30	26°29'	113°29'	VIII-10	1928	1936	204	0-72	490	490
130.35	26°20.5'	113°49'	VIII-10	1643	1658	404	0-144	111	111
130.40	26°09'	114°08'	VIII-10	1356	1410	396	0-142	96	96
130.45	25°59'	114°27'	VIII-10	0931	0945	447	0-132	45	45
130.50	25°49'	114°44.5'	VIII-10	0721	0736	357	0-142	59	59
130.60	25°29.5'	115°21'	VIII-10	0256	0311	375	0-144	125	125
133.25	26°05'	112°48'	VIII-9	0808	0816	273	0-55	366	366
133.30	25°55'	113°07.5'	VIII-9	1033	1047	508	0-111	116	116
133.35	25°44.5'	113°26'	VIII-9	1256	1310	419	0-132	38	38
133.40	25°34'	113°47'	VIII-9	1635	1650	435	0-138	14	14
137.23	25°34'	112°18.5'	VIII-8	2323	2330	244	0-61	213	213
137.30	25°18'	112°49'	VIII-9	0254	0309	492	0-133	175	175

Plankton Volumes, Cruise 5309, September 1953[1/]

Position				Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
83.40	34°14'	119°22'	IX-15	0315	0318	141	0-11	497	497
83.43	34°08'	119°37.5'	IX-15	0556	0610	384	0-131	390	390
83.48	33°58.5'	119°54.5'	IX-15	1509	1516	258	0-63	504	504
83.51	33°52'	120°08.5'	IX-15	1716	1730	488	0-143	193	193
83.55	33°44'	120°24.5'	IX-15	1851	1906	472	0-139	360	360
85.39	34°00'	119°04'	IX-16	0926	0941	473	0-141	161	161
85.40	33°57'	119°10.5'	IX-16	0816	0831	480	0-140	391	391
85.45	33°47'	119°31'	IX-16	0506	0520	490	0-142	398	398
85.50	33°37'	119°52'	IX-16	0156	0211	510	0-132	145	145
85.55	33°27'	120°12.5'	IX-15	2256	2311	477	0-139	277	277
87.35	33°50'	118°37.5'	IX-16	1236	1250	553	0-121	280	280
87.40	33°40'	118°58.5'	IX-17	0316	0331	554	0-118	352	352
87.45	33°30.5'	119°19'	IX-17	0611	0626	505	0-128	274	274
87.50	33°20'	119°40'	IX-17	0838	0846	254	0-64	497	497
87.55	33°10'	120°00.5'	IX-17	1106	1121	588	0-127	289	289
87.60	33°00'	120°21.5'	IX-17	1356	1410	556	0-116	208	208
113.30	29°22'	115°16.2'	IX-9	1629	1633	149	0-33	80	80
113.35	29°10.6'	115°38.5'	IX-9	1206	1221	497	0-139	109	109
115.26	29°13'	114°52'	IX-9	2135	2139	159	0-34	389	389
115.30	29°05.2'	115°07.8'	IX-10	0044	0051	311	0-62	135	135
115.35	28°53.8'	115°29'	IX-10	0436	0450	675	0-75	148	148
117.26	28°56.4'	114°40.8'	IX-11	0308	0314	281	0-32	221	221
117.30	28°48.1'	114°56.3'	IX-11	0008	0016	310	0-56	329	329
117.35	28°38'	115°16'	IX-10	2016	2030	488	0-134	152	152
117.40	28°28'	115°35.6'	IX-10	1316	1330	482	0-142	270	270
118[5]25	28°41.2'	114°26.7'	IX-11	0616	0622	314	0-42	51	51
118[5]30	28°31.6'	114°45.7'	IX-11	0933	0942	322	0-70	37	37
118[5]35	28°21.2'	115°06'	IX-11	1248	1256	373	0-62	27	27
119.42	28°00.5'	115°30'	IX-12	2232	2243	427	0-86	239	239
120.25	28°22.3'	114°16.7'	IX-12	0348	0354	282	0-34	149	149
120.30	28°13.1'	114°33.9'	IX-12	0027	0034	210	0-62	143	143
120.30	28°13.1'	114°33.9'	IX-16	0903	0910	249	0-50	48	48
120.31	28°04.3'	114°41.8'	IX-16	1009	1015	235	0-55	38	38
120.35	28°05.3'	114°52'	IX-11	1633	1640	295	0-57	34	34
120.43	27°46.8'	115°25.2'	IX-13	0118	0132	515	0-123	210	210
121.30	28°02.6'	114°27.2'	IX-11	2204	2208	178	0-26	101	101
121.34	27°54.8'	114°42.8'	IX-11	1909	1913	170	0-24	94	94
121.41	27°40'	115°10.3'	IX-13	0426	0440	482	0-132	145	145
121[1]26	28°10'	114°10.9'	IX-12	0624	0627	136	0-16	15	15
121[5]28	28°01.5'	114°16.3'	IX-12	1555	1556	84	0-9	24	24

1/ Coverage during September was limited to 1) an area off southern California (lines 83-87), and 2) an intensive survey of Sebastian Viscaino Bay, central Baja California (lines 113-121).

Plankton Volumes, Cruise 5310, October 1953

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
82.47	34°10.5'	119°59.5'	X-21	0126	0141	468	0-137	113	113
83.40	34°14'	119°22'	X-20	1310	1312	134	0-10	15	15
83.43	34°07.8'	119°31.6'	X-20	1735	1750	558	0-120	118	118
83.48	33°58.5'	119°55'	X-21	0353	0401	331	0-63	121	121
83.51	33°52'	120°08.5'	X-21	0617	0629	582	0-84	72	72
83.55	33°44'	120°24.5'	X-21	1041	1055	552	0-139	74	74
83.60			Not occupied						
85.39			Not occupied						
85.40			Not occupied						
85.45			Not occupied						
85.50			Not occupied						
85.55			Not occupied						
85.60			Not occupied						
87.35			Not occupied						
87.40			Not occupied						
87.45			Not occupied						
87.50			Not occupied						
87.55			Not occupied						
87.60			Not occupied						
90.28	33°28.5'	117°47'	X-20	1756	1811	462	0-143	139	139
90.30	33°24.5'	117°54.5'	X-20	1936	1951	478	0-139	117	117
90.37	33°11'	118°24'	X-20	2340	2354	463	0-136	112	112
90.45	32°55'	118°56'	X-21	0435	0450	476	0-138	227	227
90.50	32°45.5'	119°20'	X-21	0741	0756	418	0-136	311	311
90.55	32°36.5'	119°37.5'	X-21	1106	1121	447	0-144	327	327
90.60	32°27'	119°54'	X-21	1446	1500	472	0-136	326	326
90.70	32°02.5'	120°37.5'	X-21	2125	2140	(426)	0-138	178	178
93.27	32°56'	117°19'	X-22	2005	2014	(250)	0-84	120	120
93.30	32°50'	117°31.5'	X-22	1825	1840	493	0-135	118	118
93.40	32°30'	118°12.5'	X-22	1316	1331	551	0-119	84	84
93.50	32°15'	118°56.5'	X-22	0656	0711	478	0-147	151	151
97.30	32°15.5'	117°09.5'	X-20	0911	0916	193	0-44	42	42
97.35	32°05.5'	117°29'	X-20	0631	0646	485	0-137	136	136
97.40	32°01.5'	117°44'	X-20	0406	0421	467	0-138	265	265
97.50	31°37.5'	118°27.5'	X-19	2246	2301	510	0-143	177	177
100.29	31°42.5'	116°43.5'	X-18	0807	0818	372	0-101	78	78
100.30	31°40.5'	116°46.5'	X-18	0925	0940	457	0-137	31	31
100.40	31°20.5'	117°25'	X-18	1535	1550	502	0-135	72	72
100.50	31°00'	118°06'	X-18	2116	2131	481	0-139	79	79
100.60	30°38'	118°45'	X-19	0336	0351	506	0-134	103	103
100.70	30°21'	119°27'	X-19	0937	0952	474	0-138	59	59
100.80			Not occupied						

Plankton Volumes, Cruise 5310, October 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.30	31°03.5'	116°26'	X-18	0318	0326	203	0-68	98	98
103.35	30°52'	116°43'	X-18	0036	0050	380	0-145	163	163
103.40	30°44.5'	117°06'	X-17	2100	2115	408	0-138	108	108
107.32	30°26'	116°11'	X-16	1936	1951	372	0-150	205	205
107.35	30°20'	116°23'	X-16	2150	2205	399	0-139	326	326
107.40	30°10.5'	116°43'	X-17	0110	0125	394	0-139	152	152
110.33	29°54.5'	115°54'	X-16	1517	1528	288	0-106	215	215
110.35	29°50'	116°03'	X-16	1336	1351	390	0-143	149	149
110.40	29°37.5'	116°25.5'	X-16	1016	1031	379	0-147	142	142
110.50	29°13.5'	117°01.5'	X-16	0503	0518	365	0-143	143	143
110.60	28°56'	117°40'	X-15	2330	2345	430	0-137	84	84
113.30	29°23'	115°17'	X-7	1530	1536	168	0-46	53	53
113.35	29°12'	115°38.5'	X-7	1850	1905	399	0-137	326	326
113.40	29°02'	115°58.5'	X-7	2210	2225	418	0-136	301	301
117.26	28°56'	114°41'	X-8	1600	1607	219	0-64	137	137
117.30	28°48'	114°56.5'	X-8	1333	1344	(321)	0-87	62	62
117.35	28°38'	115°16'	X-8	0616	0631	402	0-130	30	30
117.40	28°28'	115°35.5'	X-8	0316	0331	420	0-133	124	124
120.25	28°23'	114°14.5'	X-8	2128	2134	178	0-52	56	56
120.30	28°10'	114°34'	X-9	0047	0057	308	0-83	195	195
120.35	28°03'	114°54'	X-9	0338	0346	229	0-78	235	235
120.45	27°42'	115°34'	X-13	1231	1246	394	0-142	183	183
120.50	27°33.5'	115°52'	X-13	1540	1554	400	0-143	135	135
120.60	27°13'	116°31.5'	X-13	2036	2051	368	0-146	92	92
120.70	26°53'	117°10'	X-14	0136	0151	399	0-144	251	251
120.80	26°35.5'	117°49'	X-13	0646	0701	424	0-132	165	165
120.90	26°13.5'	118°27'	X-14	1131	1146	411	0-139	136	136
123.37	27°24'	114°39.5'	X-13	0608	0616	232	0-58	39	39
123.40	27°20'	114°55'	X-13	0356	0411	428	0-138	159	159
123.50	26°58'	115°30.5'	X-12	2240	2255	385	0-140	114	114
127.34	26°55.5'	114°06'	X-12	0738	0746	247	0-56	114	114
127.40	26°46'	114°28'	X-12	1056	1111	515	0-114	167	167
127.50	26°22.5'	115°09'	X-12	1636	1651	359	0-144	89	89
130.30	26°29'	113°29'	X-12	0303	0311	212	0-69	509	509
130.35	26°19'	113°48.5'	X-12	0020	0035	397	0-140	292	292
130.40	26°09'	114°07'	X-11	2112	2127	347	0-142	485	485
130.50	25°49'	114°46'	X-11	1516	1531	384	0-140	344	344
130.60			Occupied. Sample not quantitative						
133.25	26°05'	112°50'	X-10	1618	1626	233	0-75	120	120
133.30	25°56'	113°09'	X-10	1906	1921	429	0-133	310	310
133.40	25°34'	113°47'	X-11	0015	0030	393	0-140	229	229
137.23	25°34'	112°18.5'	X-10	0644	0650	193	0-64	135	135
137.30			Occupied. Sample lost						

Plankton Volumes, Cruise 5311, November, 1953

Position			(1953)	Time (PST)		Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
								Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
81[8]46	34°18.3'	119°58'	XI-10	1440	1455	479	0-140	44	44
82[3]47	34°11'	119°59.2'	XI-10	1631	1645	523	0-135	38	38
83.40	34°14'	119°22'	XI-10	0755	0758	145	0-19	28	28
83.43	34°08'	119°33.5'	XI-10	1001	1015	462	0-151	56	56
83.48	33°58.2'	119°55.7'	XI-10	1849	1854	211	0-33	95	95
83.51	33°52'	120°08.8'	XI-10	2123	2132	294	0-98	153	153
83.55	33°44'	120°24.5'	XI-11	0031	0046	564	0-142	266	266
83.60	33°34.8'	120°43.5'	XI-11	0445	0460	534	0-126	266	266
85.39	34°00'	119°04'	XI-12	0146	0201	537	0-107	793	48
85.40	33°57'	119°10.5'	XI-12	0016	0031	435	0-136	76	76
85.45	33°46.8'	119°31.3'	XI-11	1831	1846	474	0-137	106	106
85.50	33°37.5'	119°52'	XI-11	1451	1505	420	0-167	145	145
85.55	33°26'	120°15.9'	XI-11	1025	1041	633	0-121	109	109
85.60	33°18.6'	120°32.3'	XI-11	0806	0820	601	0-111	275	275
87.35	33°50'	118°37.4'	XI-12	0536	0551	442	0-159	27	27
87.40	33°40'	118°58.5'	XI-12	0921	0936	529	0-135	81	81
87.45	33°30'	119°19'	XI-12	1301	1326	425	0-162	146	146
87.50			Occupied. Sample lost						
87.55	33°10'	120°00.5'	XI-12	1926	1941	434	0-156	120	120
87.60	32°59.5'	120°23'	XI-12	2311	2326	528	0-131	218	218

Plankton Volumes, Cruise 5312, December 1953

Position			Time (PST)			Vol. water strained	Depth of haul	Vol.per 1000 C.M.strained	
			(1953)					Total	Sm.org.
Sta.	N.lat.	W.long.	Date	Start	End	C.M.	in meters	cc.	cc.
81[8]46	34°18'	119°58'	XII-3	1056	1110	524	0-127	84	84
82[3]47	34°10.5'	119°59.5'	XII-3	0846	0901	572	0-128	70	70
83.40	34°14'	119°22'	XII-3	1730	1732	86	0-20	93	93
83.43	34°08'	119°34'	XII-3	1526	1541	508	0-138	91	91
83.48	33°58.5'	119°55'	XII-3	0613	0620	277	0-92	65	65
83.51	33°52'	120°08.3'	XII-3	0336	0351	534	0-141	56	56
83.55	33°44'	120°25'	XII-3	0045	0101	495	0-147	89	89
83.60	33°33.5'	120°45.5'	XII-2	2034	2051	598	0-137	268	268
85.39	34°00'	119°04'	XII-3	2006	2018	390	0-93	92	92
85.40	33°56.5'	119°11'	XII-3	2221	2236	524	0-140	99	99
85.45	33°47'	119°31.5'	XII-4	0246	0301	525	0-129	137	137
85.50	33°37'	119°52'	XII-4	0606	0620	541	0-139	126	126
85.55			Not occupied						
85.60			Not occupied						
87.35	33°50'	118°37'	XII-6	0136	0151	544	0-134	85	85
87.40	33°40'	118°58.5'	XII-5	2121	2136	543	0-137	110	110
87.45	33°29.5'	119°18'	XII-5	1736	1750	548	0-139	106	106
87.50	33°19.5'	119°39.5'	XII-5	1418	1425	259	0-62	100	100
87.55	33°10'	120°30'	XII-5	1126	1141	529	0-133	181	181
87.60			Not occupied						
90.28	33°28.5'	117°46.5'	XII-6	0746	0800	584	0-129	72	72
90.30	33°24.5'	117°55'	XII-6	0956	1011	571	0-133	88	88
90.37	33°11'	118°23'	XII-6	1351	1406	536	0-141	104	104
90.45	32°54.5'	118°56'	XII-7	0711	0725	532	0-144	113	113
90.50	32°44.5'	119°16.5'	XII-7	1016	1030	552	0-134	98	98
90.55	32°34'	119°35.5'	XII-7	1426	1441	534	0-143	131	131
90.60	32°25'	119°57.5'	XII-7	1819	1836	547	0-161	135	135
90.70			Not occupied						
93.27	32°56'	117°18.5'	XII-8	1348	1356	350	0-82	86	86
93.30	32°51.5'	117°31.5'	XII-8	1206	1221	546	0-138	66	66
93.40	32°31'	118°10'	XII-8	0646	0700	500	0-147	40	40
93.50	32°10'	118°53.5'	XII-8	0056	0111	500	0-154	104	104
97.30	32°15'	117°09'	XII-8	1919	1924	179	0-51	167	167
97.35	32°05.5'	117°29'	XII-8	2226	2241	549	0-141	47	47
97.40	31°55'	117°50'	XII-9	0136	0151	547	0-142	58	58
97.50	31°39'	118°32.5'	XII-9	0656	0710	564	0-137	379	379
100.29	31°42'	116°43.5'	XII-11	0428	0436	354	0-79	79	79
100.30	31°40.5'	116°47'	XII-11	0316	0331	515	0-138	82	82
100.40	31°21'	117°27'	XII-10	2146	2201	562	0-131	68	68
100.50	31°00'	118°00'	XII-10	1626	1640	515	0-155	23	23
100.60	30°39.5'	118°47'	XII-10	1101	1116	504	0-151	40	40
100.70	30°21.5'	119°26.5'	XII-10	0436	0450	525	0-146	65	65
100.80	30°01'	120°07'	XII-9	2306	2320	556	0-135	40	40

Plankton Volumes, Cruise 5312, December 1953 (cont'd)

Position				Time (PST)		Vol. water strained	Depth of haul	Vol. per 1000 C.M. strained	
			(1953)					Total	Sm. org.
Sta.	N. lat.	W. long.	Date	Start	End	C.M.	in meters	cc.	cc.
103.30	31°05'	116°25'	XII-11	0928	0936	283	0-68	35	35
103.35	30°55.5'	116°45'	XII-11	1221	1236	501	0-138	40	40
103.40	30°46.5'	117°08'	XII-11	1536	1551	535	0-131	56	56
107.32	30°26.5'	116°11'	XII-12	0206	0221	599	0-129	30	30
107.35	30°20'	116°23'	XII-12	0006	0021	549	0-135	55	55
107.40	30°10.5'	116°43.5'	XII-11	2031	2045	567	0-136	67	67
110.33	29°50'	115°53'	XII-12	0647	0658	495	0-94	32	32
110.35	29°46.5'	116°00'	XII-12	0856	0910	581	0-136	17	17
110.40	29°36.5'	116°19.5'	XII-12	1245	1260	599	0-134	13	13
110.50	29°17.5'	116°56.5'	XII-12	1746	1800	489	0-140	123	123
110.60	28°56'	117°38'	XII-12	2336	2350	529	0-142	61	61
113.30	29°23'	115°18'	XII-12	1559	1604	196	0-55	20	20
113.35	29°12.5'	115°43.2'	XII-12	1056	1111	578	0-129	62	62
113.40	29°01.2'	116°01.5'	XII-12	0806	0821	577	0-125	17	17
117.26	28°56.2'	114°42'	XII-11	1303	1310	328	0-59	9	9
117.30	28°48'	114°56.2'	XII-11	1643	1650	328	0-61	30	30
118.33	28°27'	114°57.5'	XII-11	2057	2106	(292)	0-77	31	31
120.25	28°22.7'	114°14.2'	XII-11	0438	0445	(234)	0-54	34	34
120.30	28°12.5'	114°34.5'	XII-10	0648	0656	345	0-62	3	3
120.35	28°02.7'	114°53.5'	XII-10	0038	0045	254	0-75	28	28
120.45	27°45'	115°33.2'	XII-9	1706	1721	(536)	0-143	103	103
120.50	27°33'	115°52'	XII-9	1236	1250	545	0-145	55	55
120.60	27°12'	116°35'	XII-9	0236	0250	(557)	0-129	99	99
120.70	26°53'	117°10'	XII-8	1911	1926	535	0-129	138	138
120.80	26°32'	117°48'	XII-8	1221	1235	542	0-138	33	33
120.90	26°13'	118°27'	XII-8	0446	0501	518	0-131	56	56
121.31	27°57'	114°29'	XII-10	1009	1012	(130)	0-26	23	23
123.37	27°24'	114°39.7'	XII-6	1913	1920	205	0-61	171	171
123.40	27°18'	114°51.7'	XII-6	2156	2211	460	0-143	91	91
123.50	26°58.5'	115°30.7'	XII-7	0416	0430	569	0-127	201	201
127.34	26°56'	114°06.7'	XII-6	1348	1356	300	0-70	37	37
127.40	26°44.5'	114°33.5'	XII-6	0641	0656	486	0-139	70	70
127.50	26°25'	115°09'	XII-5	2356	0010	500	0-135	274	274
130.30	26°29'	113°29'	XII-4	1603	1610	309	0-61	52	52
130.35	26°19.3'	113°48.5'	XII-4	2021	2036	533	0-126	174	174
130.40	26°08'	114°07'	XII-5	0116	0130	519	0-132	91	91
130.50	25°43.5'	114°43'	XII-5	0826	0841	534	0-122	15	15
130.60	25°29'	115°24'	XII-5	1601	1615	534	0-130	22	22
133.25	26°06'	112°50.5'	XII-4	1018	1024	254	0-47	79	79
133.30	25°57.5'	113°05.5'	XII-4	0738	0745	330	0-61	24	24
133.40	25°34.5'	113°45.5'	XII-4	0116	0131	501	0-134	40	40
137.23	25°34.5'	112°18.7'	XII-3	1238	1245	327	0-62	73	73
137.30	25°20'	112°45.5'	XII-3	1651	1706	572	0-117	40	40

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